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Hospital Performance: An Analysis of Unscheduled Care Activity 2017 – 2022

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Paper Summary

- This paper provides an analysis of patient level Unscheduled Care data recorded in the Patient Experience Time dataset over the period 2017-2022.
- The paper provides numerous insights into patient characteristics and outcomes in Unscheduled Care environments, including in relation to their age, admission probability, clinical need, mode of arrival and whether they have a referral. The findings of the paper either have overt or indirect implications for strategic policy development for Unscheduled Care in Ireland.
- The paper identifies data gaps for Unscheduled Care in Ireland, as well as opportunities for future research to further develop understanding. Where possible, the PET dataset should be leveraged to provide bespoke ex-ante evaluation of interventions to improve outcomes and reduce pressures in Unscheduled Care. In addition, the data environment should be improved with the provision of better data on patient clinical characteristics (via Urgency Related Groups), rectification of data gaps, and the provision of more extensive data on interventions and costs used within each Winter / In-year Unscheduled Care plan.

Findings

- **Unscheduled Care Demand:** Unscheduled Care Presentations have risen from 1.1m in 2010 to 1.59m in 2022. Cumulatively, this represents a 45% increase in demand over this period, with the largest periods of growth between 2010 and 2012 (an increase of 200,000 presentations) and an increase of 250,000 presentations between 2021 and 2022.
- **Utilisation Rates:** Per capita utilisation of emergency departments is concentrated among those aged 0-5 (54 visits per 100) and those ages 76+ (53 per 100 visits, or greater) relative to a presentation rate of under 30 visits per 100 for persons aged 6-75.
- **Admission Probability:** Admission probability has a direct relationship with age. For example, a person aged 20 has a 14% rate of admission, compared to someone aged 80 with a 50% rate of admission.
- **Triage Score:** Probability of admission is directly related to triage score. Less than 10% of patients at triage score 4 and 5 (standard and non-urgent) are admitted. Triage category 3 patients (urgent) are admitted 23% of the time. This has implications for which patients are likely best suited to treatment within community settings rather than in the ED.
- **Wait Times:** There is a strong relationship between wait times and age. For example, median wait times for under 5s are 3.5 hours, compared to wait times of 9 hours for persons over 85. This is likely driven by the triage scores of patients by age, as persons of a younger age are less likely to be admitted than older patients and are therefore able to leave an Unscheduled Care environment after initial assessment (which takes place within a maximum of four hours from arrival).
- **Hour of Arrival:** There is some evidence that probability of admission and waiting times in ED are dependent on hour of arrival. Patients who arrive with a triage score of immediate (patients of highest acuity) wait on average one hour longer for admission / discharge if they arrive at night than during the day. Equally, patients with a triage score of immediate are 20% less likely to be admitted when arriving during the day, versus a nighttime arrival.
- **Mode of Arrival – Ambulance:** Arrival by ambulance versus through other pathways is associated with a 20-25% increase in admission probability. This is likely attributable to the higher acuity of patients arriving by ambulance, and the pre-triaging of presentations via this pathway by paramedics prior to conveyance to hospitals.
- **Referral Type – GP vs Self:** 73% of referrals to Unscheduled Care settings from GPs do not result in an admission. This compares to 77% of presentations not resulting in admission for patients who self-refer. GP Out of Hours referrals are not admitted 75% of the time. This may indicate that GP referrals are not sufficiently effective at triaging patients for treatment in the community versus treatment in an acute setting. The even lower rates of admission of patients with Out of Hours GP referrals suggest inappropriate referrals to ED from this pathway.
- **Triage Score Attendances by Health Region:** There is substantial variation in the triage level (acuity) of patients arriving in each Health Region, especially low acuity patients. For example, just 8% of presentations at Health Region Midwest are triage category 4 (standard) or 5 (non-urgent). This compares to Health Region Dublin Southeast (DSE), where 33% of presentations are of the same category. This may be the result of the availability of alternative treatment options in some regions, with for example Health Region Midwest having 3 operating Local Injury Units, versus other regions having more limited LIU coverage.

Recommendations

- **Alignment of Acute Care Capacity Resourcing with Demographic Change:** Our analysis has shown that the utilisation rate and admission probability of older patient cohorts is substantially higher than for other groups. This has direct implications for forecasting future Unscheduled Care capacity requirements at a national and regional level, as population ageing will likely increase demand pressures in both Unscheduled Care settings and Inpatient facilities.
- **Wait Times for Older Age Cohorts/ Patient Flow:** Our analysis demonstrates the long waits patients experience in ED prior to admission. Further work is required to understand the barriers to timely admission for these patients, especially those from older age cohorts, to better align outcomes with HSE general and age specific (over 75) wait time performance targets. Policymakers and practitioners could explore a range of options to improve in this area, including more efficient assignment, management and discharge of patients to beds, the provision of dedicated treatment pathways such as Medical Assessment Units for older patient cohorts, the treatment of additional patients in the community or; or the provision of additional beds in some hospitals to alleviate capacity pressures.
- **Specialised Treatment of Paediatric Patient Cohorts:** 61% of persons under 16 presented to Unscheduled Care settings outside of the Children's Hospital Group in 2022. Given the relatively high utilisation rate and low triage scores of patients of this type, policymakers should consider whether these patients can be treated in alternative settings within the healthcare system, either in the community or segregated pathways for treatment within a hospital.
- **Factors Contributing to Variation in Outcomes by Hour of Arrival:** We demonstrate variation in waiting times and admission probability for patients by hour of arrival, even controlling for patient triage score. This poses a potential patient safety and efficiency issue and is therefore worthy of further exploration. Potential contributors to this outcome could include differences in patient profiles by hour of arrival, reduced diagnostic availability during non-core hours, differences in staffing levels and the availability of senior decision-makers on a 24/7 basis.
- **Targeted Intervention to reduce presentations from low-acuity patients:** Our analysis demonstrates the sizeable proportion of patients (29%) who present to Unscheduled Care settings with low-acuity needs. These patients are largely of younger ages and are concentrated in certain Health Regions (Dublin Southeast, Southwest). This presents the opportunity for the development of targeted interventions to reduce the utilisation rate of Unscheduled Care settings by these groups, instead treating them in community or primary care settings. For example, investment in alternative care pathways such as Primary Care Centres or Local Injury Units could be concentrated in areas where lower triage presentations are most prevalent.
- **Explore strategies to reduce the level of unnecessary referrals from primary care settings into Unscheduled Care:** We demonstrate that patients who self-refer to ED are admitted at only a slightly lower rate (23%) than those who attend with a referral from a general practitioner (27%). This indicates unnecessary referrals to Unscheduled Care settings from primary care practitioners in some cases, and therefore represents an opportunity to reduce unscheduled care pressures through more effective referral decisions by primary care practitioners.
- **Continuous Evaluation of Target Investment in Unscheduled Care:** This paper is a novel application of the existing PET dataset to support improved monitoring and performance management within the healthcare system. Policymakers should ensure that analysis of PET data is used to maximise the impact of investments in unscheduled care, improving patient outcomes, value for money among other outcomes. Interventions to improve unscheduled care performance should be the subject of continuous evaluation, with the objectives, inputs, outputs and outcomes associated with each measure analysed after their implementation to determine their relative impact.
- **Data Improvements & Implementation of Urgency Related Groups (URGs):** To further enable the use of PET for strategic policy development and evaluation, we advocate for further improvements to the Patient Experience Time dataset to be prioritised within short- and medium-term strategic planning in this area. First, we advocate for the development and implementation of Urgency Related Group classifications within Unscheduled Care settings in Ireland as this would allow identification of the resource requirement and reason for presentation to unscheduled care for each patient. Second, data improvements to existing reporting should be sought, including improvements to unclassified characteristics for some patients within the PET dataset, and the collection and reporting of PPSNs for each presentation.

1 Introduction

Unscheduled Care is defined as health and/or social care which cannot reasonably be foreseen or planned in advance of contact with a relevant medical professional. It follows that such demand can occur at any time and that services to meet this demand must be available 24 hours a day seven days a week. Improving the patient pathway through the Emergency Department for either subsequent admission or discharge is a challenge for the Acute Hospital system and requires coordination of medical, surgical, and diagnostic services¹.

Unscheduled Care is a significant component of overall acute care activity in Ireland. The Irish Acute Healthcare System is comprised of 29 Emergency Departments, 15 Local Injury Units and multiple Medical Assessment, Acute Surgical Assessment, and Clinical Decision Units. Unscheduled Care settings are distributed throughout Ireland, with this distribution in general aligned to regional population profiles (see Figure 1.1). Patients who attend an Unscheduled Care setting, such as an Emergency Department (ED) or Local Injuries Unit (LIU), are then in some cases admitted to hospital after assessment based on the clinical needs of the patient. Out of 1.59 million presentations in 2022, 359,386 were admitted to hospital (23%). Murphy et al 2022, discusses how Unscheduled Admission can crowd out elective activity within public hospitals, with this demonstrating how unscheduled care has implications for acute care outcomes beyond the immediate environment. In recent years, there has also been major growth in demand for Unscheduled Care services. Over the period 2017-2022, Unscheduled Care presentations have increased from 1.25 million to 1.59 million, an increase of 27%. The continued growth in patient demand presents an ongoing challenge, both in terms of the staffing and delivery of healthcare in this setting, and in the financing of this growing level of activity.

Unscheduled Care policy is integrated into the wider acute care policy eco-system in Ireland. However, focussed policy development for Unscheduled Care is also commonplace, both in terms of high-level strategic frameworks, as well as the development of short-term interventions in Unscheduled Care to reduce wait times and address rising demand. The predominant strategy in this context is the “National Emergency Medicine Programme”², which was published in 2012. Some key objectives of this strategy include:

- I. Integration of pre-hospital and hospital-based services into the National Emergency Care System.

¹ <https://cuh.hse.ie/about-us/project-flow/unscheduled-care/>

² <https://www.hse.ie/eng/services/publications/clinical-strategy-and-programmes/the-national-emergency-medicine-programme.pdf>

- II. Expansion of the number and hours of consultant presence in EDs.
- III. Development of new roles for staff, speciality, and nurse practitioners.
- IV. Development of new clinical governance structures across the emergency care system.
- V. Introduction of national Key Performance Indicators for Emergency Departments.
- VI. Development of new roles for GPs in EDs and the enhancement of links with Primary Care and,
- VII. Development of cost-measurement and resource allocation systems to enable the cost-effectiveness of emergency care to be measured and improved.

In 2018, a “Trauma Strategy for Ireland 2018”³ was published, with implications for Unscheduled Care policy due to the frequency of presentations from patients with Trauma care needs. The Trauma Strategy advocates for the establishment of an “inclusive trauma system”, where a network of facilities and services co-ordinate in the care of injured patients along standardised pathways. The new trauma system will consist of two trauma networks, the Central Trauma Network, and the South Trauma Network. Each trauma network will have a Major Trauma Centre and a number of Trauma Units. Each of the two Major Trauma Centres will provide the highest level of specialist trauma care to the most severely injured patients on a single hospital site. As part of trauma networks, Trauma Units will deliver more general trauma care to patients who do not need the specialist expertise of a Major Trauma Centre.

In addition to these high-level strategic initiatives, short-term planning is also employed in periods of heightened Unscheduled Care demand to coordinate immediate responses. Primarily, annual ‘Winter Plans’⁴ are used, with these documents laying out national, hospital site and CHO level initiatives to alleviate anticipated pressures arising over the winter period such as greater presentations and admissions due to influenza and other respiratory illnesses. Typically, interventions in this context include the delivery of additional short- and medium-term capacity for acute and community services, improved pathways of care for patients, rollout of vaccination programmes for Flu (and more recently COVID-19) in primary care settings, and expansion of primary care access as a means to reduce acute care pressures. For example, the 2022 plan provides €169m of expenditure⁵ both recurring and non-recurring for measures over Q4 2022 and Q1 2023, including:

³ <https://assets.gov.ie/10116/70fd408b9ddd47f581d8e50f7f10d7c6.pdf>

⁴ <https://www.hse.ie/eng/services/news/media/pressrel/winter-plan-2022-23.pdf>

⁵ This was funded from existing voted expenditure.

- I. €30m for Acute care capacity and services, including implementation of Safe Staffing & Skill-Mix Frameworks, procurement of private capacity, and prioritisation of recruitment for existing funded posts.
- II. €20m for older persons services, including transitional care funding and short stay respite services.
- III. €30m for primary and community care services, including funding for aids and appliances, enhanced CIT Capacity, and increased GP, Out of Hours, and disability services.
- IV. €80m for bespoke hospital group and CHO initiatives, including an extension of LIU operating hours, local site and CHO responses, and the expansion of integrated action teams.

While there is significant focus on high-level strategic initiatives and short-term interventions in Unscheduled Care, there remains some deficit in strategic policy development in this area in terms of analysis and evaluation. There is in particular a need for continuous strategic planning in this area, informed by data analysis, to compliment short-term interventions and achieve longer-term reconfiguration of service delivery within Unscheduled Care. One can identify for example that challenges in Unscheduled Care settings are persistent, with high trolley numbers and wait times over targeted levels frequently occurring in many emergency departments (Health Service Executive, 2022). Without evaluation of the core drivers of these issues and whether existing interventions have been effective, policymakers will remain constrained in adjudicating on an appropriate path forward for Unscheduled Care policy design.

The HSE is currently in the process of developing an Urgent and Emergency Care 3-year Framework and Strategy, aiming to remediate the predominant focus of Unscheduled Care policy to date on short-term interventions. In response to, and as part of the development of this strategy, there is a need to further understand the composition and characteristics of patient demand for Unscheduled Care services to enable the identification of priority areas for targeted intervention and remediation. This paper provides this necessary analysis, enabling policymakers to better understand the interactions of age, mode of arrival, admission rates and triage scores, and how each of these factors can inform the development of targeted demand-response interventions.

Specifically, this paper examines trends within Unscheduled Care and provides a broad illustration of patient presentation characteristics over the period 2017-2022, including but not limited to:

- I. Total Unscheduled Care presentations.
- II. The composition of Unscheduled Care presentations by age.
- III. The utilisation rates of emergency departments and LIUs by age.

2 Data, Methodology and Limitations

2.1 Data

The primary dataset used to produce this analysis was the Patient Experience Time (PET) dataset. PET is administrative dataset which reports patient level data daily across all 29 Emergency Department sites and a portion of Local Injury Units (LIU) (9 out of 15). In total, the dataset contains data on 8 million presentations between 2017 and 2022. The Patient Experience Time dataset is managed by the HSE Acute Business Information Unit (BIU). The BIU receive the data, which is reported at a hospital level, on a daily basis. Characteristics reported in the Patient Experience Time dataset include⁶:

- I. **Patient Age and Gender.**
- II. **Time of Arrival** - When patients arrive to an Unscheduled Care setting.
- III. **Time of Departure** - The time at which a patient leaves an Unscheduled Care setting.
- IV. **Wait Time**- This variable is derived by calculating the total time between Time of Arrival and Time of Departure.
- V. **Discharge Destination** - Where the patient is discharged to. This can include: admission to hospital, discharged home or referral to an AMAU. In total there are 24 discharge destinations.
- VI. **Manchester Triage Score** - This is a clinical score assigned to patients based on acuity.
- VII. **Mode of Arrival** - This is how a patient arrives at an Unscheduled Care setting, modes include Self-attendance, Ambulance and Air Ambulance.
- VIII. **Referral Type** - This variable classifies the type of the referral a patient has received. Referral types include, Nursing Home, Self, GP, Internal Hospital referral and Out of Hours GP. In total there are 14 different types of referrals.
- IX. **Attendance Type** - This classifies whether a patient is a new attendance, return attendance or unscheduled return.
- X. **Triage Start Time** - This is the time at which a patient was seen for triage.
- XI. **Time seen by Treating Clinician** - This is the time at which a patient is seen by the treating clinician.
- XII. **Time seen by Admitting/Consulting Clinician** - This variable measures the time when a patient was seen by the Admitting or Consulting Clinician.
- XIII. **Time of Disposition Decision** - This variable measures the time of disposition by the ED team.

⁶ In total PET has 21 Fields, this list provides a summary of some of these fields.

XIV. PAS Admission Time/Bed Request - This variable measures the time at which a patient leaves the ED, or a bed request is made on the Patient Administration System (PAS).

Three other data sources were leveraged to complement our analysis of Unscheduled Care using the PET dataset. All included analysis which relies on these additional sources of information are clearly labelled within the content of the report. The three sources are:

- I. Health Service Executive Management Data Reports (MDRs) 2010-2022.
- II. HSE Health Atlas.
- III. CSO Census 2016/2022.

Census data was used to understand the relative per capita use of Unscheduled care across the State and how this has changed over time. This was used to understand differences in Unscheduled Care activity by region, relative to the underlying population of a given region. The HSE MDRs were leveraged to obtain the total number of Unscheduled Care Presentations by year from 2010 to 2016. HSE Health Atlas provides the population by Health Region based on the 2016 Census. While these data were not directly available in PET, they were viewed as useful context by the authors with regards to the current growth in Unscheduled Care demand in recent years.

2.2 Methodology

The core objective of the paper is to analyse patient level data to provide strategic inferences for unscheduled care policy. RStudio was used as a primary tool for the completion of data analysis. To account for administrative errors such as incorrect patient age, patients aged between 0 and 105 were included only⁷. Once this data was cleaned to remove potential errors around patient age and year of attendance the data was then analysed and the visualisations which are seen throughout this paper were produced. In developing some of the graphics descriptive statistics such as the mean and median were produced. The median was used as the preferred method for evaluating patient waiting times given the effect outliers may have on skewing the mean.

To provide an understanding of the utilisation rates of Unscheduled Care settings distinct datasets were used including the HSE Health Atlas population estimates by Health Region, and Census data for 2016 and 2022⁸. These population projections were used in conjunction with presentation data to

⁷ This accounted for 2650 Presentations omitted over the period 2017-2022, out of over 8 million observations.

⁸ These datasets were merged by age category using the R merge function.

understand the population utilisation rates by age cohort and Health Region, as seen in Figure.3.9 & Figure.4.1. Prior to 2016 data on presentations was not available within the PET dataset, with this instead obtained from annual HSE Management Data Reports (MDRs).

Given that CHI covers Unscheduled Care for paediatric patients in parts of Health Regions DNE, DML and DSE it was decided the most appropriate comparison of Unscheduled Care utilisation across the Health Regions was for patients over the age of 20⁹. This limits the risk of patients being double counted or omitted. It may also be noted that in general, national level analyses conducted include paediatric patients, with these only omitted for one utilisation graphic (Figure 4.2).

When conducting analysis around triage scores, patients without a triage score within the PET dataset were omitted. Sensitivity analysis was undertaken to evaluate whether patients with an unclassified triage type were different in characteristics from those assigned any triage score. The relative admission rates of these groups was comparable, with 23% of unclassified presentations being admitted versus 25% of classified presentations. The initial data provided was in single year of age however to reduce the level of variability and to ensure statistical disclosure did not occur, presentations were grouped into 5-year bands for all cohorts over the age of 5. Presentations between the ages of 0-5 were grouped into one band which contains six values.

This analysis is viewed as point in time analysis and it is envisioned that the learnings of this paper can be implemented to enable a dynamic evaluation of activity as further and more detailed patient-level data becomes available.

2.3 Limitations

The authors note several limitations associated with the use of the Patient Experience Time dataset for this analysis including:

- I. Prior to 2020, triage scores are not reported and therefore it is hard to ascertain how the distribution of patient acuity has changed. Since 2020, reporting of triage scores has varied, with completeness of reporting being a persistent challenge in some sites.
 - a. Persistence poor reporting of triage scores has been observed, with some regions reporting a very high proportion of unclassified presentations.
- II. Issues arise with the total time some patients spend in Unscheduled Care settings, such as:

⁹ This age was chosen based on the data available online on HSE Health Atlas was in 5-year age bands (15-19)

- a. Patients spending a total time of 0 minutes in an Unscheduled Care setting.
 - b. Patients leaving Unscheduled Care settings before they arrive and patients leaving Unscheduled Care settings months after they arrive.
 - c. Questions around the accuracy of time points within a patients flow through Unscheduled Care also exist (e.g in accuracy of time to disposition and time to admission decisions within the dataset).
- III.** The absence of an Urgency Related Group (URG) classification limits the inferences which can be made around the acuity and need of presentations to solely the triage score to which patients are assigned.
 - IV.** Issues exist with the consistency of reporting of other variables such as mode of arrival, and referral type.
 - V.** The Management Data Reports (MDRs) are used prior to 2017 to provide a high-level understanding of how unscheduled care demand has changed over a longer time period. However, the values contained within the MDRs after 2017 do minorly differ to values seen in PET, with this attributable to differences in processes around data collection.
 - VI.** COVID-19 evidently presents a demand shock, with this presenting challenges in evaluating the trends seen over the period 2019-2022.
 - VII.** This analysis focuses only on care delivered within public facilities; no data is contained within PET for patients who attend private Unscheduled Care services.

Overall, these issues present challenges to understanding the true composition of demand and providing a more granular analysis of certain questions. However, as this paper shows the data in its current form provides significant inferences which can be developed further with improved reporting and a reduction in data errors.

2.4 Further Research

The focus of this paper is to provide broad inferences to support strategic policy development for Unscheduled Care. Nonetheless, the breadth of the information available in the Patient Experience Time dataset means that there is much potential for future research in this domain including:

- I.** An Evaluation of Paediatric presentations at a hospital level
- II.** An Evaluation of Hospital-level presentations and characteristics
- III.** An Analysis of Low Acuity Admissions and their relative characteristics
- IV.** An Evaluation of the characteristics of Older Persons using Unscheduled Care

- V.** An Analysis of the characteristics of return presentations to Emergency Departments
- VI.** An Evaluation of the effect of Local Injury Unit openings on adjacent Emergency Department demand.
- VII.** An Analysis of patient characteristics in Emergency Departments reporting Urgency Related Groups (notably, the completed Tullamore pilot study).
- VIII.** The impact of Bank Holidays / large events on unscheduled care demand and patient experience.
- IX.** An analysis of the core drivers of growth in unscheduled care demand.
- X.** An Analysis of Regional level service provision, population characteristics and their effects on Unscheduled Care demand.

3 National Trends in Unscheduled Care

3.1 Introduction

The Patient Experience Time dataset presents a significant opportunity for understanding the dynamics of presentations and patient flow in Unscheduled Care. As mentioned, the PET dataset contains a wide breadth of information on each presentation to the Unscheduled Care setting, including mode of arrival, whether a person has a referral, age, acuity, and whether a person was admitted. Through close examination of these factors, as well as the interaction of each of these factors with end outcomes (in particular, whether a person was admitted), we can gain a unique understanding of unscheduled activity from a data-driven perspective. This analysis can then be leveraged to inform strategic policy development for Unscheduled Care, with many of the characteristics that are examined in this section having intuitive implications for policy and future investment in the area. For example, an examination of presentations and admissions by age group enables optimisation of current and capital investment relative to expected demand, and allows for the identification of specific areas of focus for targeted interventions to reduce utilisation.

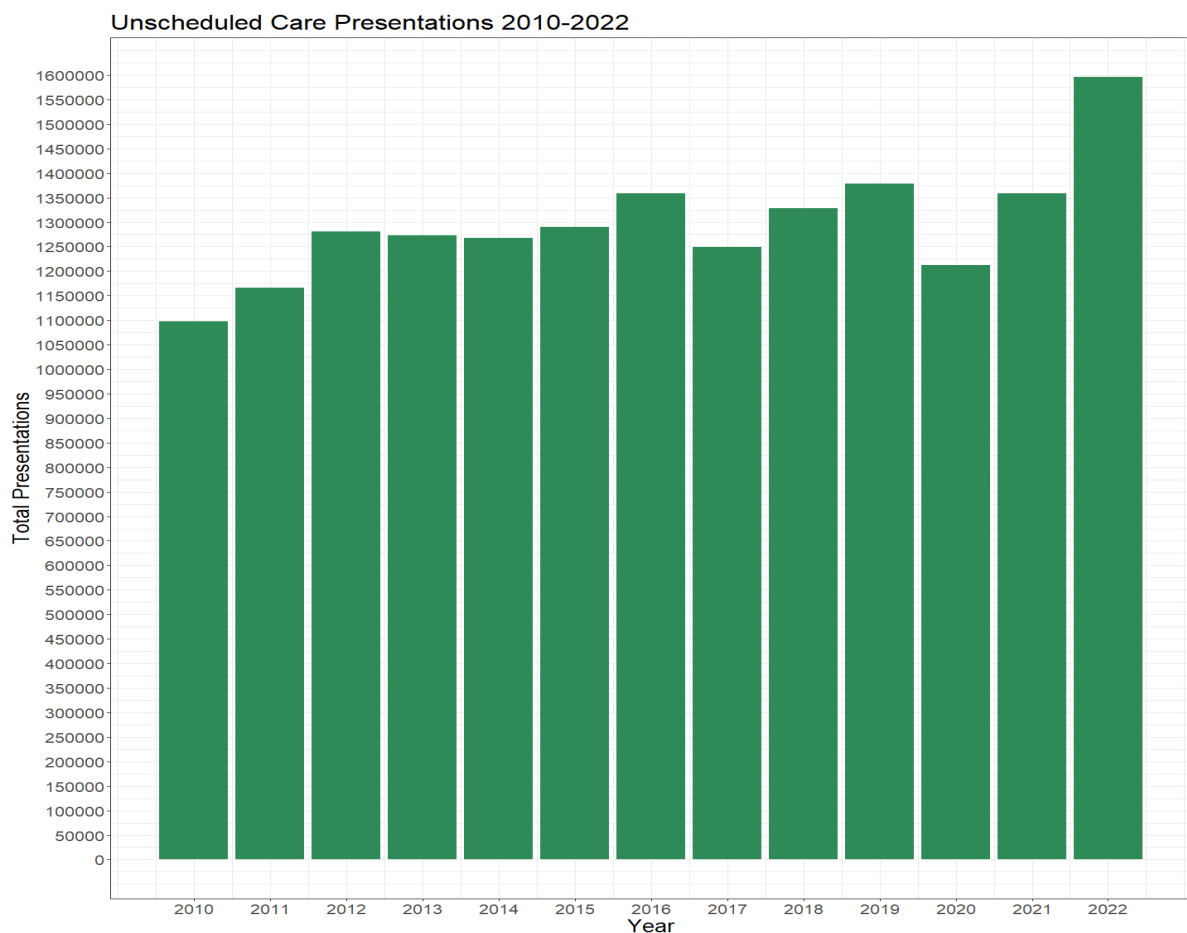
3.2 Overview of Historic Demand

Before exploring the characteristics and relationships of Unscheduled Care presentations it is useful to first examine historic demand for Unscheduled Care services in Ireland. In the context of policy development, historic demand is an important consideration as it enables a better understanding of the path and size of overall demand pressures. This is of particular relevance given the pressures that have been witnessed in Unscheduled Care in recent years, with the HSE and the Department of Health continually seeking measures to address long Unscheduled Care waits and reduce the numbers of persons on trolleys. There is also a general desire to reduce acute care pressures from these institutions, with this being a core aim of the longer-term transition towards greater delivery of healthcare services in the community as part of Sláintecare reforms. We examine historic presentations in this section by both year and month to better understand the development of presentations to Unscheduled Care settings over time.

Firstly, Figure 3.1 presents Unscheduled Care presentations by year from 2010 to 2022. In general, presentations have been on a continuous upward trajectory during this period, rising from a low in 2010 of 1.1m to a high in 2022 of 1.6m. Within this overall growth path two periods of particularly substantial growth can be observed; An increase of 200,000 presentations from 1.1m in 2010 to 1.3m in 2012 and; An increase of 250,000 presentations from 1.35m in 2021 to 1.6m in 2022. The latter of

these two jumps may be attributable to the confluence of RSV, Flu & COVID-19 infections in 2022, prompting patient presentations in excess of their baseline level (Mossad, 2023). In general, jumps in Unscheduled Care demand such as those observed are problematic for health system planning and performance. While in general demand for Unscheduled Care is a function of demographic characteristics, health behaviours and access to services and can therefore be forecasted, the unanticipated rise in Unscheduled Care demand experienced in 2022 resulted in a worsening of patient wait times over the period, with those waiting over 6 hours for completion of treatment rising from 35.4% in 2018 to 43% in 2022 (HSE MDRs, 2018; 2022). The prospect of further increases in patient presentations over the next decade, in line with the cumulative 45% increase experienced between 2010 to 2022 could pose a problem for the delivery of health services in line with targeted performance. Whether the observed increase in presentations in 2022 will be sustained will be a key question with regards to long-term service planning and strategy in this area.

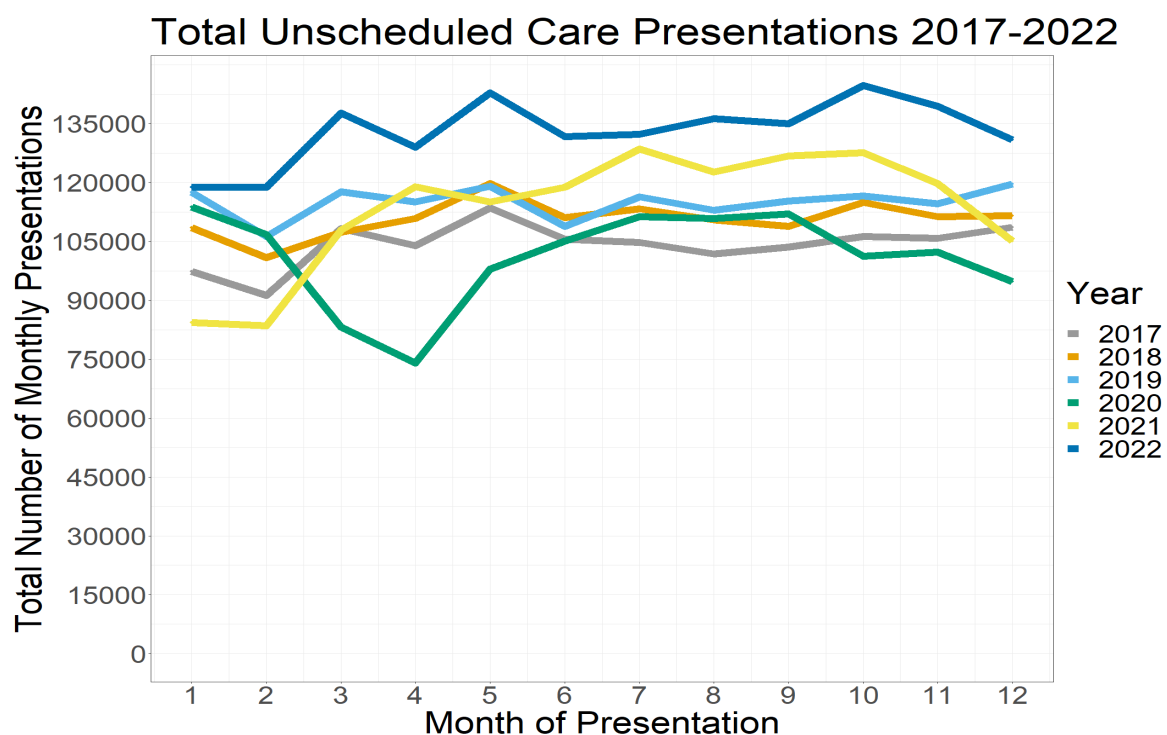
Figure.3.1.: Unscheduled Care Presentations 2010-2022



Source: HSE Management Data Reports 2010-2016, & Patient Experience Time dataset

To compliment the above analysis, in Figure 3.2 the distribution of presentations by month over the period 2017-2022 is presented. The effect of COVID-19 lockdowns in March, April and May 2020 can be seen, with low levels of presentations during these months relative to the norm. While lockdown and restrictions on care delivery were present throughout much of 2020, the clearest fall in presentations is present between March and April that year¹⁰. In terms of seasonality of demand, in general the peaks in presentations are consistent across years (excluding 2020/2021), with the range of variation within years is minimal (excluding 2020/2021). For example, In contrast to expectations presentations in 2022 are roughly constant throughout the year at roughly 135,000 presentations per month, peaking in March, May, and October. Equally, no clear relationship between unscheduled care demand and presentations is observed (in particular the winter period). While seasonal demand pressures may arise through other means (e.g, there is evidence that respiratory admittances increase over the Winter period¹¹, with this impacting the monitoring of patients required in Unscheduled Care) This finding nonetheless runs counter to overall expectations for demand pressures in this setting.

Figure.3.2: Monthly Presentations to Unscheduled Care Settings 2017-2022



Source: Patient Experience Time dataset, 2023

¹⁰<https://www.hse.ie/eng/about/who/cspd/ncps/emp/achievements/emergency%20medicine%20in%20ireland%20during%20the%20covid-19%20pandemic-years%20like%20no%20other.pdf>

¹¹ <https://imj.ie/a-comparison-of-summer-and-winter-emergency-hospitalisations-in-ireland/>

Trends in presentations by month can be more closely examined in Table 3.1. One can see for example that the COVID-19 response measures in 2020 and 2021 resulted in a higher level of monthly variation in presentations, with the respective range¹² in presentations at 39,000 and 45,000, compared to a range of roughly 20,000 presentations in most months. Equally, the growth path of presentations over time is clear when mean and maximum monthly presentations are considered, with maximum presentations in a given month also useful to consider in determining necessary Unscheduled Care surge capacity.

Table.3.1.: Descriptive Statistics of Monthly Presentations 2017-2022

Year	Max	Min	Median	Mean	Range
2017	113,552	91,202	105,101	104,194	22,350
2018	119,706	100,867	110,953	110,707	18,839
2019	119,575	106,286	115,775	114,938	13,289
2020	113,767	73,968	103,644	101,065	39,799
2021	128,477	83,473	118,828	113,224	45,004
2022	144,734	118,745	133,610	133,108	25,989

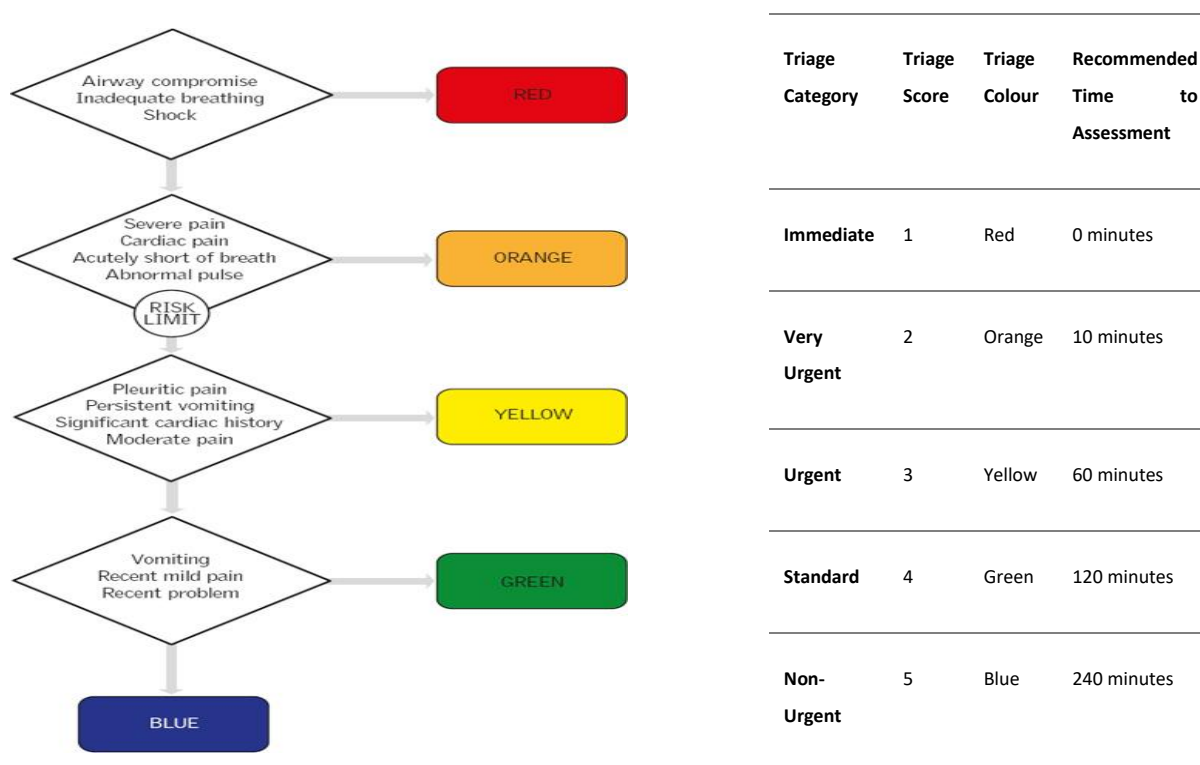
Source: Patient Experience Time dataset, 2023

¹² The difference between maximum and minimum monthly presentations.

3.3 Manchester Triage Score

The Manchester Triage is a system used in Emergency Departments and Local Injury Units in Ireland. It enables nurses to assign a clinical priority to patients based on presenting signs and symptoms without making assumptions about the eventual underlying diagnosis. The Manchester Triage allocates patients to one of five categories which determine the urgency of a patient's care needs (HSE, 2023). To provide an understanding of the type of patients within each triage category, Figure 3.3 provides an overview of the grouping structure used in the Manchester Triage Score. The table beside the graphic description of triage categories provides an illustration of the alignment of colours and codes with the triage category descriptor. The Manchester triage score also has associated clinical targets for the maximum waiting time of each of these cohorts prior to being seen by a Clinician. Examination of Manchester Triage scores is useful for our analysis as it enables an understanding of the broad clinical needs of patients arriving at Unscheduled Care settings at both a national and regional level.

Figure 3.3: Manchester Triage Score Graphic and Descriptive Table¹³



Source : (Ganley & Annabella, 2011) (Lähdet, Suserud, Jonsson, & Lundberg, 2009)

¹³ The colours used within the graphics do not align with triage scores, the colour palette was selected to be colour blind friendly.

In Figure 3.4, the composition of attendances by triage score excluding non-classified presentations¹⁴ for 2022 is provided. Some clear insights are available from the graphic:

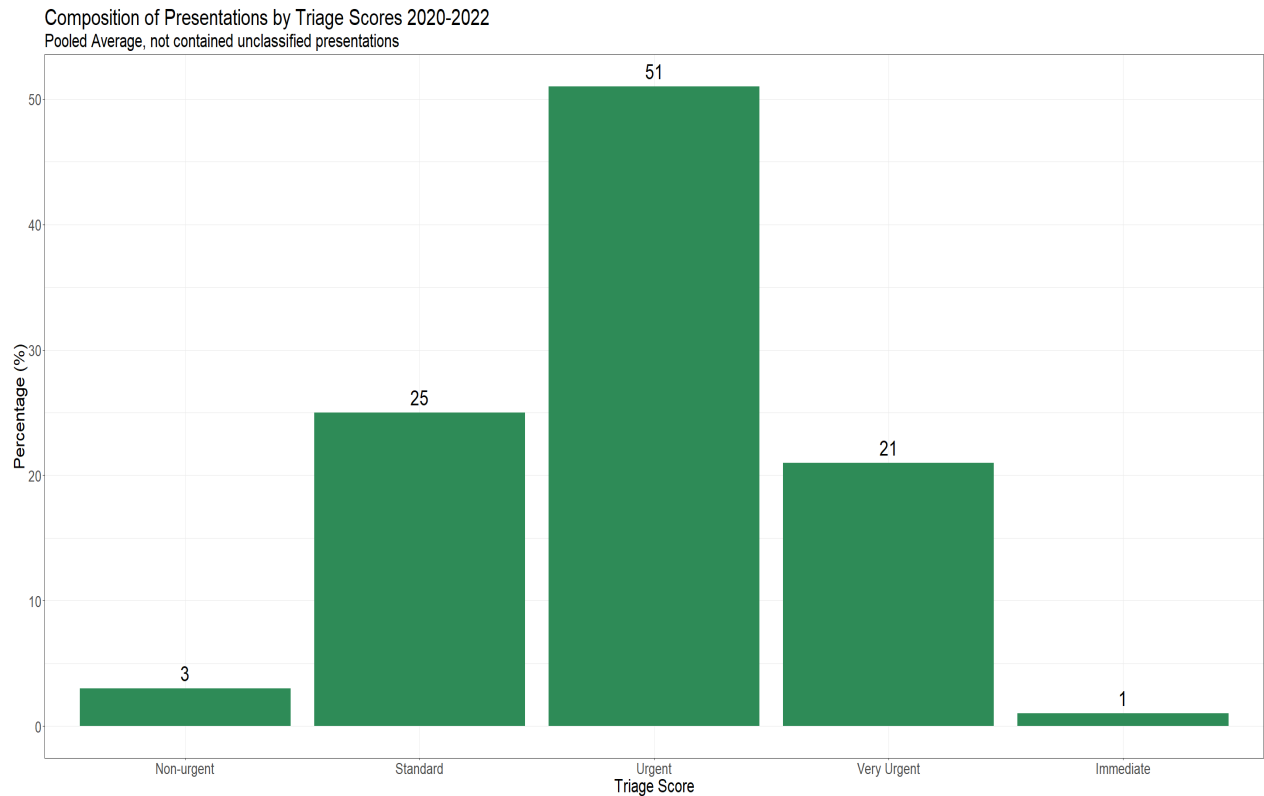
- I. 51% of triaged presentations (approx. 600,000) have a triage score of “Urgent”, with a further 29% of presentations having a triage score of “Standard” or “Non-Urgent”. The prevalence of low-triage presentations to emergency care settings raises the opportunity for a proportion of these patients to be treated within alternative facilities such as enhanced community care or the provision of additional local injury unit capacity.
- II. 21% of all presentations have a triage score of “Very Urgent” or “Immediate”. These patients are those which require the greatest level of staff per patient, and likely face the highest clinical risk associated with extended waits in ED prior to admission.

As noted, the reporting of Triage Scores varies across sites, with 21% of total presentations lacking an assigned triage score within the PET dataset. Given that patient triage is important consideration for operational and strategic decisions for Unscheduled Care, it is important that this deficit in reporting is addressed. For example, the ‘Safe Staffing Framework’¹⁵ recommends a level of nursing and healthcare assistant staff to be deployed in Unscheduled Care settings that is partially dependent on the triage score of patient arrivals. The maintenance of a high-level of unreported triage values will likely cause issues with the implementation of the framework and could lead to less effective allocations of staff across hospitals.

¹⁴ Unspecified presentations are removed for this distribution. In 2022 there was approximately 340,000 presentations with no triage score assigned out of total presentations of 1.6m.

¹⁵ <https://assets.gov.ie/226687/1a13b01a-83a3-4c06-875f-010189be1e22.pdf>

Figure. 3.4: Percentage of Presentations by Manchester Triage Score 2020-2022



Source: Patient Experience Time dataset, 2023

In addition to the above, the acuity of patients presenting to Unscheduled Care also has important implications for policy from a patient safety perspective, with patient acuity directly related to the clinical risk associated with longer patient waits in this setting, and the feasibility of reducing acute care pressures through treatment of patients in alternative settings. In terms of the relationship between triage and wait times, the HSE has already defined clear targets for the treatment of patients of each triage score within a certain interval as shown in Figure 3.3.

- I. For example, patients categorised as for “Immediate” treatment (triage score 1) should be seen by a clinician without waiting.
- II. Equally, patients of Triage score “Standard” (triage score 4) are recommended to wait no longer than 120 minutes.

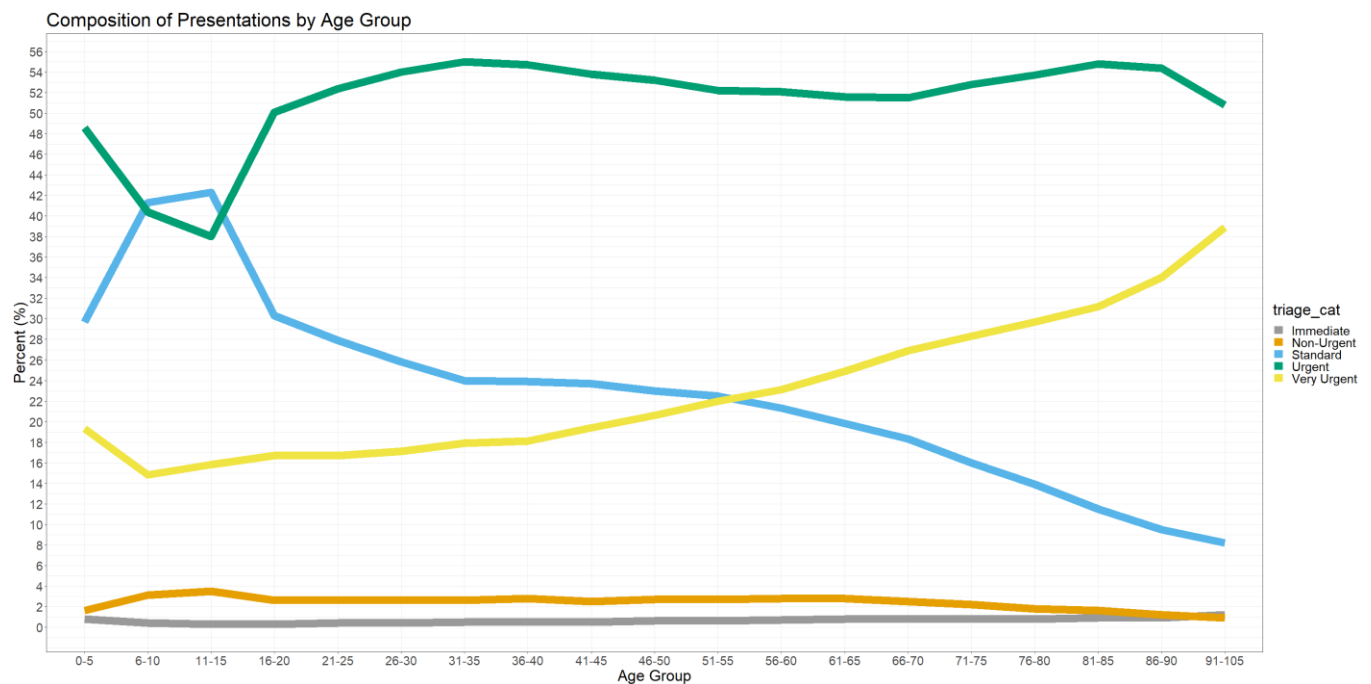
It follows that adherence or non-adherence with these wait time targets for patients of each triage type may have an associated impact on patient outcomes. Triage scores are also useful to consider in the context of health system design and substitution between different care settings. In particular,

Sláintecare advocates for reducing acute care pressures through treatment of a greater number of patients in community settings, including those with chronic conditions (Government of Ireland, 2018). It follows that an examination of triage scores can help identify to what extent this substitution opportunity is present, with patients presenting of a low triage score likely suitable for treatment in the community relative to those with higher scores.

In Figure 3.5 below the relative proportion of triage scores for patients within each age band is shown¹⁶. One can see that while the proportion of persons of triage category “Non-Urgent” and “Immediate” is roughly constant (and low, making up less than 4% of total presentations) there is large variation in the proportion of patients of other triage levels by age. For example, the proportion of persons categorized as “Standard” triage level declines markedly with age, falling from highs of over 40% for persons aged 6-15, to below 20% for those over 65. “Very Urgent” presentations follow a similar pattern, with the proportion of presentations in this group in general rising with age. Understanding how patient acuity differs by age can enable targeted interventions to ensure care is delivered in the most appropriate setting. Equally, it provides foresight into how case mix within Unscheduled Care settings may change as the population ages.

¹⁶ it should be noted that patients who are “not classified” by triage score are omitted from this analysis, this cohort accounts for 21% of all presentations.

Figure. 3.5: Triage Scores by Age:2022



Source: Patient Experience Time dataset,2023

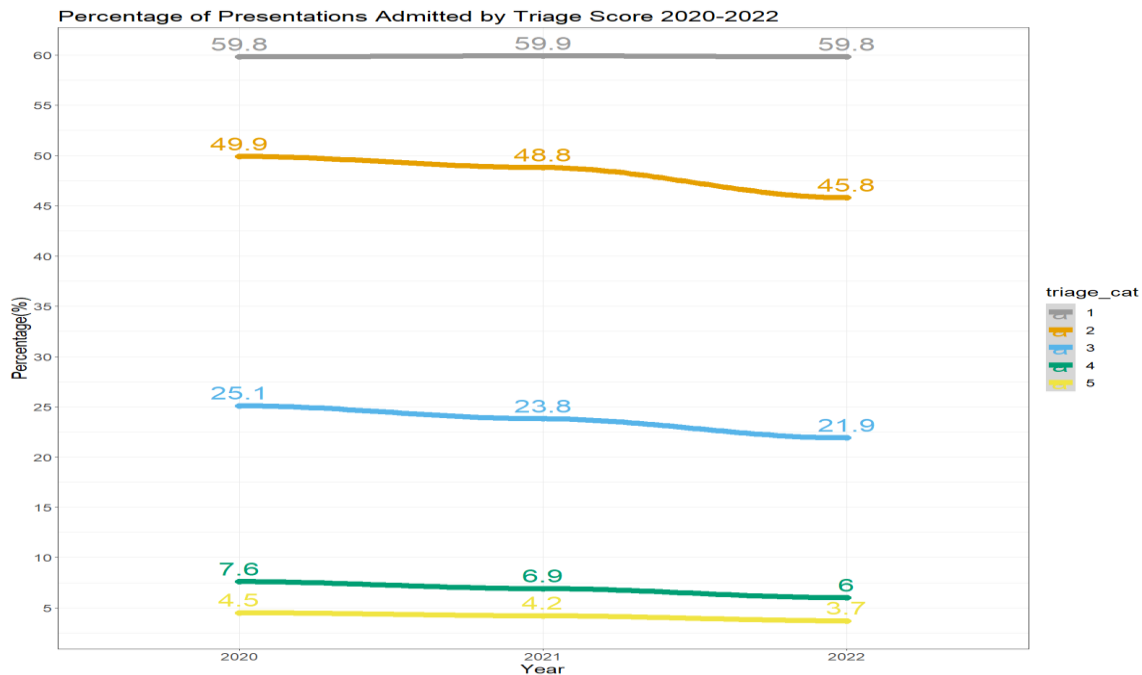
Summarising, Figure 3.5 presents some clear findings around the composition of presentations by triage category and age group.

- I. Patients aged 6-15 present 40-42% of the time with minor injuries, this equates to 127,000 (8%) of all presentations. Further research is warranted to evaluate whether these patients would be suitable for treatment in a community setting.
- II. As patients get older the composition of “Very Urgent” presentations increases, with 24% of all presentations in the 51-55 cohort being “Very Urgent”. This figure increases further as patients age increases. Therefore, as demographics change, the number of high acuity patients is likely to increase.
- III. The composition of “Immediate” and “Non-Urgent” presentations is low across all age cohorts with limited variation experienced. This may be expected given that patients with a score of “Immediate” would have life threatening injuries, equally presentations with a score of “Non-Urgent” would potentially attend lower acuity settings in most instances and therefore, a low proportion of such presentations would be warranted.

To build on this analysis, Figure 3.6 below presents the admittance rates of patients by triage score annually over the period 2020-2022. In general, the proportion of patients assessed to be a certain

triage level is constant, although there is a slight downwards trend in admissions for patients with a triage score of “Very Urgent” (2), with admittance rates dropping from 49.9% in 2020 to 45.8% in 2022.

Figure 3.6: Percentage of Presentations Admitted by Triage Score 2020-2022



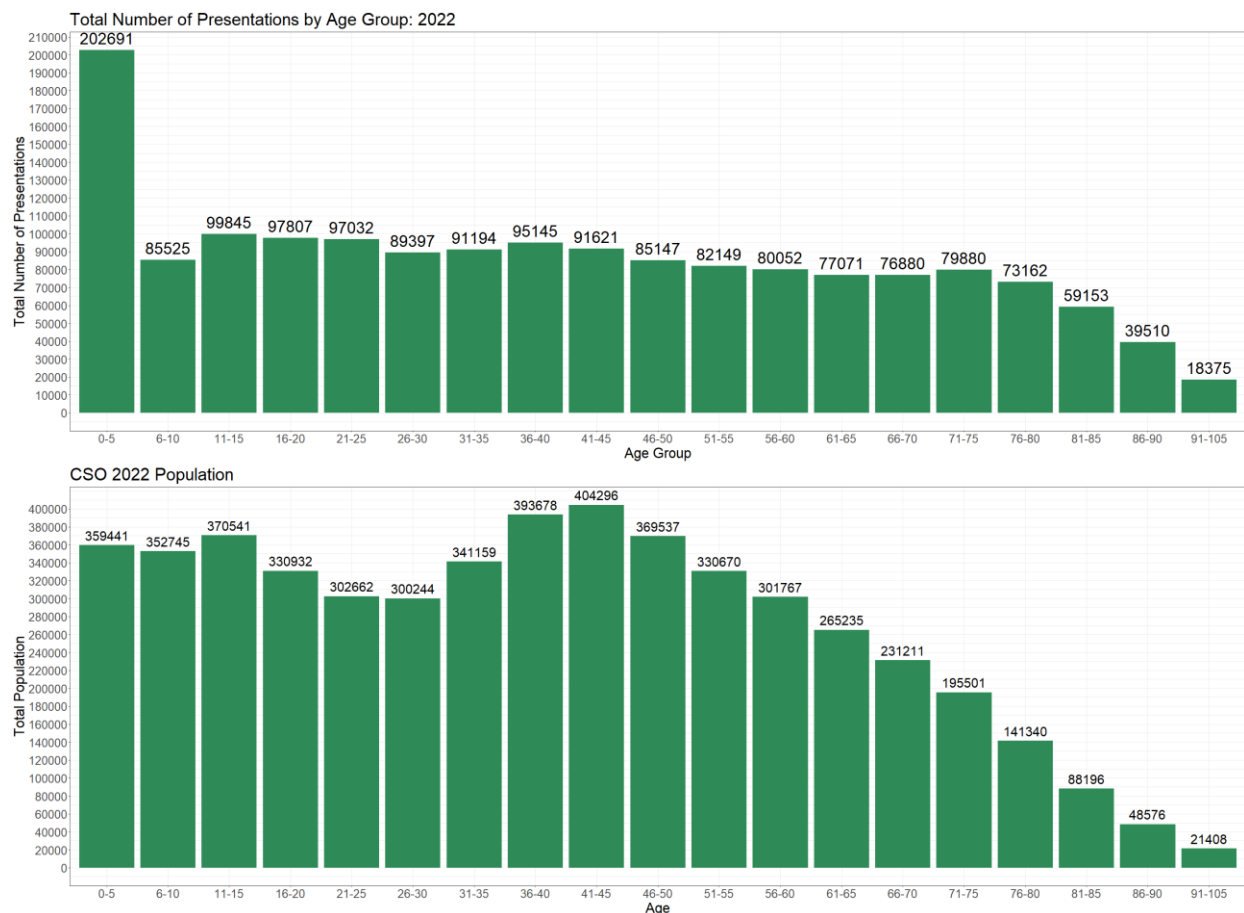
Source: Patient Experience Time dataset, 2023

3.4 Presentations and Utilisation rates by Age Group

To obtain a better understanding of the drivers of Unscheduled Care demand, Figure 3.7 shows a breakdown of presentations to Unscheduled Care settings by five-year age bands in the year 2022. While the volume of patients in most five-year age bands is roughly constant at 70,000 to 80,000 presentations, there are two trends of note. Firstly, and most prominently, the number of presentations from the zero to five age group is over double the average number, with presentations from this age group totalling over 200,000 in 2022. Secondly, the volume of presentations from persons in the 81-85, 86-90 and 91-105 age bands is below this 70,000 – 90,000 constant level. While this is of course due to these population sub-groups forming a smaller portion of the total population of Ireland (for example, persons over 80 are just 3.7% of the population, see Figure 3.2) it nonetheless has implications for how to structure interventions to potentially reduce demand pressures in Unscheduled Care in Irish hospitals. In particular there are two main implications for policy of this distribution of presentation volume:

- I. There may be a need to focus interventions on reducing presentations from persons in the zero to five age group, relative to other population groups. Further research will be required to understand the drivers of presentations within this age group and the potential interventions which may reduce the demand whilst ensuring clinical best practice is achieved.
- II. While healthcare needs of older patients are in general higher, strategies focussed on reducing Unscheduled Care demand from older patients may be needed to be paired with a focus on population level interventions, as older patients form a relatively small proportion of total presentations (just 7.3% of all presentations are over the age of 80)¹⁷.

Figure 3.7: Total Presentations by Age Group 2022 (Top) & Figure 3.8: Population of Ireland by Age Group 2022 (Bottom)



Source: Author's Analysis of Patient Experience Time/ CSO 2022 Census Data

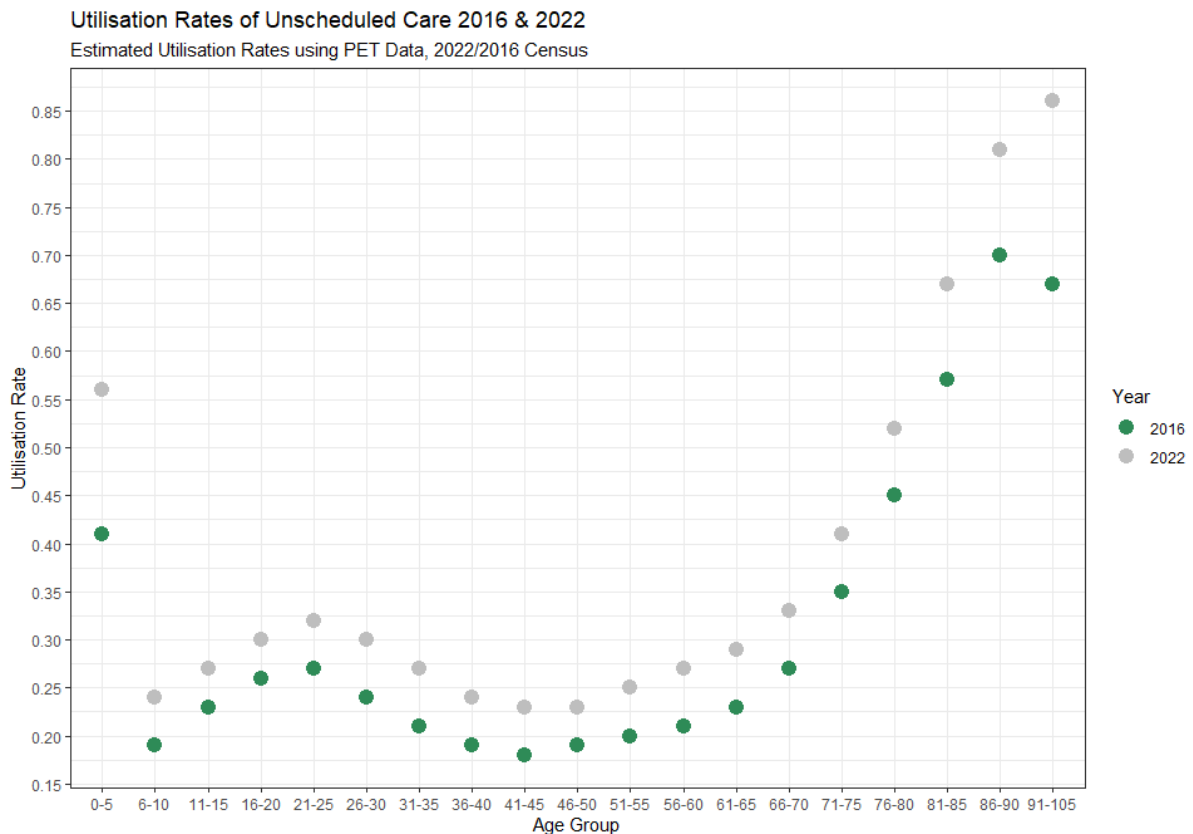
¹⁷ However, resource utilisation by older patients is undoubtedly high, given higher care needs due to frailty, fall risk, and other factors. Of course, an increase in average age in Ireland will equally lead to higher presentations from this group, so in this context interventions to treat these patients in the community may be effective in reducing long-run unscheduled care demand.

Our analysis of Unscheduled Care presentations within each age band is complemented by a comparison of presentation volume relative to the underlying population cohorts in Ireland, as in Figure 3.9. This can be seen as a “utilisation rate” for Unscheduled Care, demonstrating the average number of visits to Unscheduled Care settings per person per year. This is useful as it clearly identifies where demand for Unscheduled Care services is originating allowing for consideration of targeted interventions across age cohorts to reduce demand. One can see for example that those aged under 5 not only make up a large proportion of total presentations, as in Figure 3.7, but also have a comparatively high utilisation rate for Unscheduled Care services relative to persons aged 10-70. In contrast, persons over 70 have a comparatively high utilisation rate of Unscheduled Care, despite making up a small proportion of total presentations. It can be noted in particular that:

- I. Utilisation rates for persons aged 6-70 are roughly constant, with an average number of 24–33 Unscheduled Care visits per 100 individuals.
- II. Utilisation rates for persons aged 0-5, 70-80 are approximately double the average level for persons 6-70, with an average of 50 visits per 100 individuals.
- III. Utilisation rates for persons aged over 85 are approximately three times the average level for persons 6-70.
- IV. A clear increase in utilisation is seen across all cohorts with patients attending more often per capita in 2022 than in 2016. This presents significant challenges for the Unscheduled Care system to both manage increased demand due to population growth and demographic changes, alongside increased rates of attendances across all cohorts.

The drivers of such a deviation in utilisation are multi-faceted. For example, it is well established that a surge in RSV infections in late 2022 led to additional acute care pressures, especially from patients under the age of 5. Equally, older persons are likely to have greater clinical care needs due to pre-existing comorbidities, meaning they are more likely to have a need for healthcare services including emergency care. Fimognari et al (2022) identify that older adults attend Unscheduled Care settings more frequently than younger cohorts, and with non-specific complaints, with many of these patients being discharged with a different diagnosis to what was diagnosed within the Emergency Department.

Figure.3.9: Average Number of Visits to Unscheduled Care Settings Per Year by Age



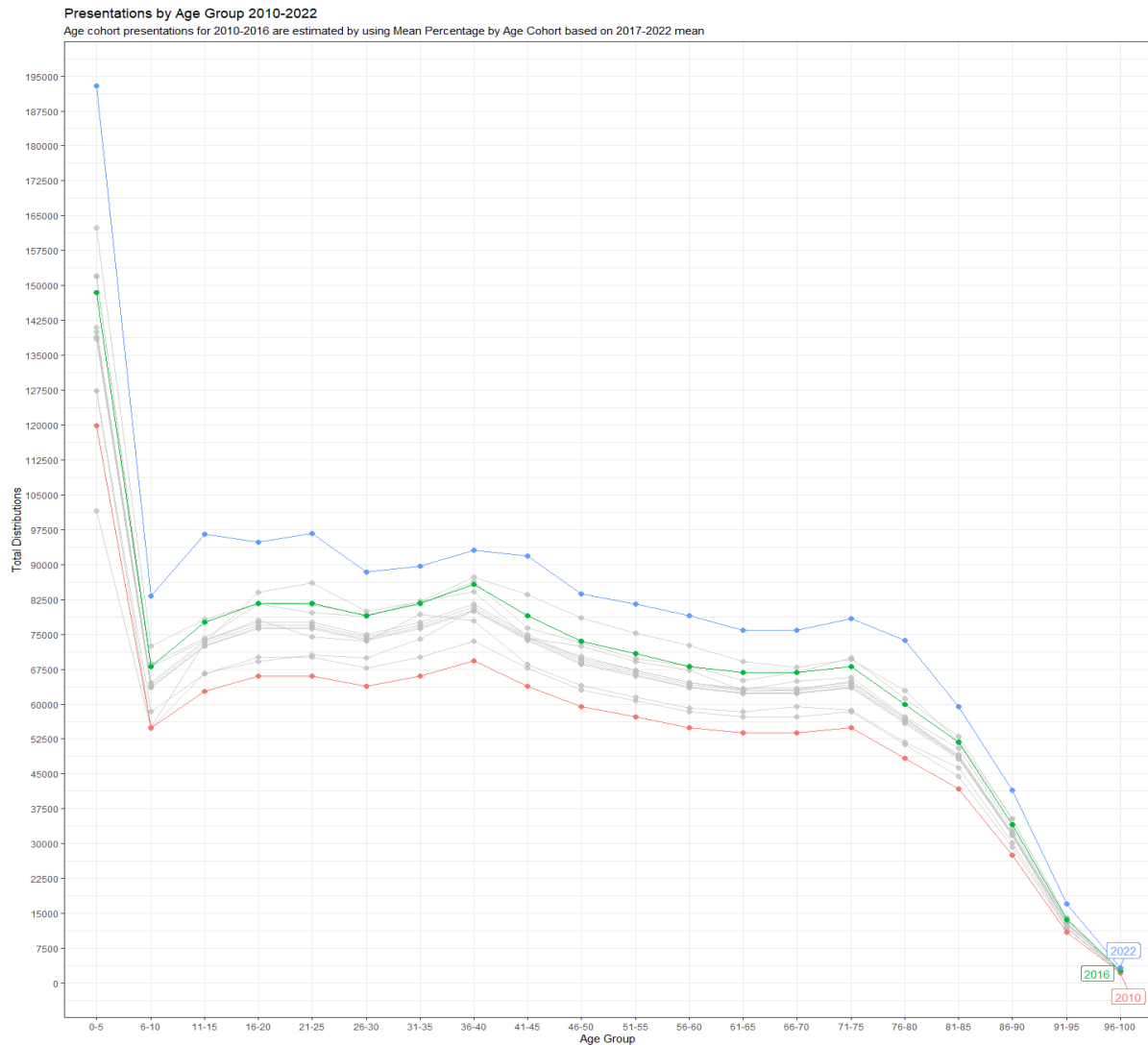
Source: Patient Experience Time dataset, 2023

To further investigate the consistency of the relationships observed in Figure 3.7 and Figure 3.9, Figure 3.10 demonstrates the numbers presenting at Unscheduled Care by age group over the period 2010 to 2022. In all cases, we observe a similar pattern of presentation volume in Figure 3.10 as in Figure 3.7. While it can be noted for example that presentations from those under 5s were particularly high in 2022 relative to other years, presentations from this age group tend to in general be almost double the number of presentations from those in 5-year aged bands from 6-70. Equally, utilisation rates for persons of other ages are consistent over time, with only a minor deviation in the level of presentations by age group in 2022 relative to 2010, attributable to the higher level of presentations overall in this later year. In 2022, the composition of unscheduled paediatric patients by type of Unscheduled Care setting is as follows:

- I. 61% (234,826) of all paediatric patients in 2022 attended sites which treat both adults and paediatric patients.
- II. The remaining 39% (153,235) attended one of the CHI sites (see [Appendix A.1](#)).

Given the high portion of patients being treated in sites which deliver care to both adults and paediatric patients, and the relative number of low acuity patients within this cohort. Alternative care settings could be considered for these patients such as enhanced community care/paediatric care in the community or segregated paediatric facilities within a general Emergency Department where this doesn't already exist.

Figure 3.10: Presentations by Age Group 2010-2022



Source: Authors Calculations using HSE MDRs and PET dataset

3.5 Admission Rates of Patients presenting to Unscheduled Care

The likelihood of a patient being admitted is intrinsically linked to the clinical need of a patient and has important implications for both Unscheduled Care and overall hospital capacity. This section evaluates how the characteristics of Unscheduled Care presentations influence the rate of admission¹⁸ for patients, examining the following:

- I. Rate of Admission by Patient Age Group
- II. Rate of Admission by Mode of Referral
- III. Rate of Admission by Mode of Arrival
- IV. Rate of Admission by Age and Referral Type

Understanding the interactions of these patient characteristics with rates of admittance has important implications for acute care demand forecasting and the prospect of care substitution through greater utilisation of non-acute care settings for patient treatment.

To begin, in figure 3.11 the rates of admission for patients by age are examined. A clear relationship between age and a patient's likelihood of admission can be seen, with patients aged under 50-55 having less than a 25% rate of being admitted compared to a 55% rate of admission for those over 80. Aside from the clear implications of this finding for future inpatient bed demand across age cohorts, we additionally highlight the following:

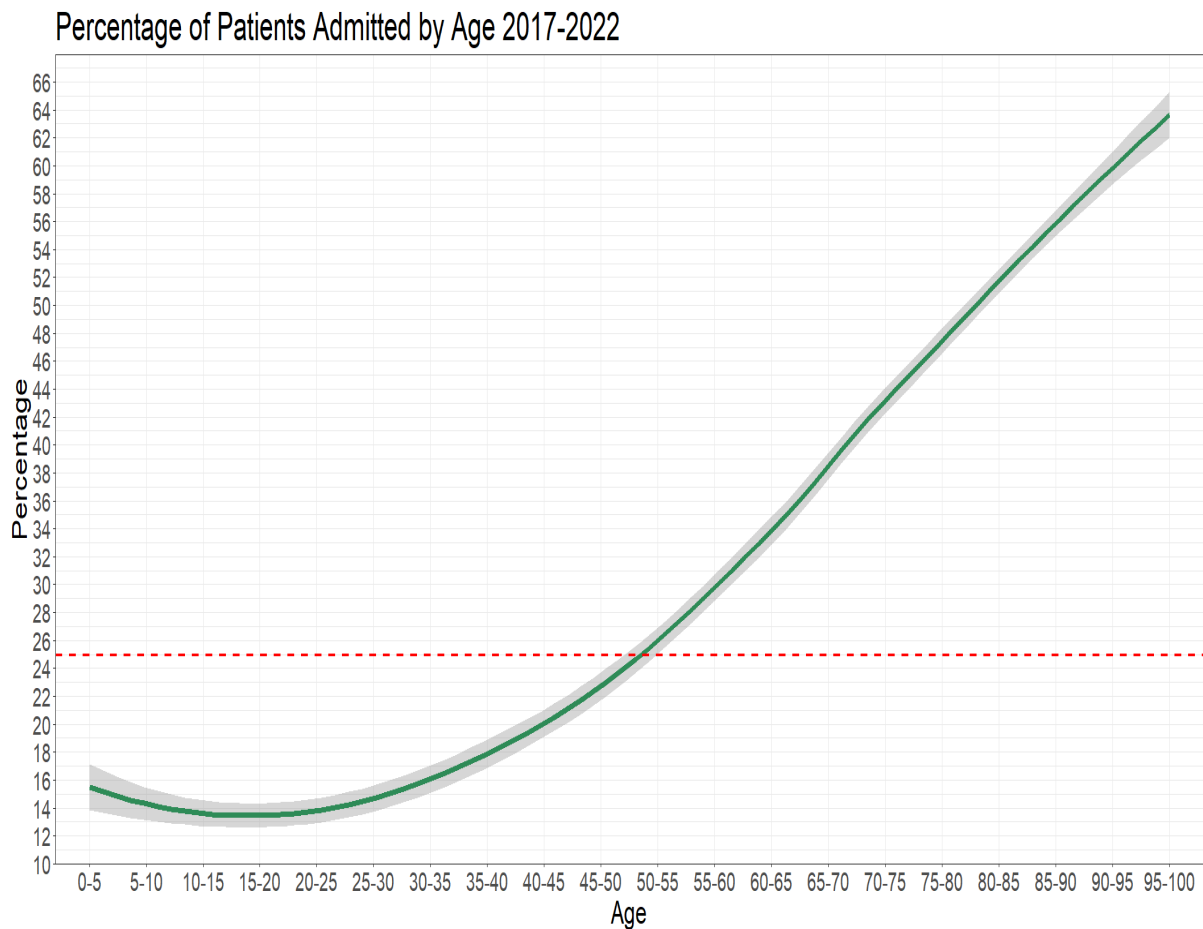
- I. The low rates of admission for most age cohorts demonstrates were appropriate substitution of care towards non-acute care settings is likely the most viable.
- II. As patients age the rates of admission increase linearly, with patients over the age of 75 being twice as likely of being admitted as a patient aged 50.

Admission rates can help inform the relative levels of capacity required to deliver Unscheduled Care. Using this information alongside another powerful patient level dataset such as the Hospital Inpatient Enquiry (HIPE), a deep understanding into historic presentation patterns and drivers of unscheduled admissions could be developed as follow-up work to this paper. These characteristics could be used to develop a predictive model to forecast the future level of capacity by unscheduled admissions and the potential distribution of presentations by Major Disease Category (MDC)¹⁹.

¹⁸ From the PET dataset admission was assumed to be Code 20: Admitted to Ward and Code 30: Admission Lounge.

¹⁹ <https://ibis.health.utah.gov/ibisph-view/pdf/resource/MDC.pdf>

Figure 3.11: Probability of Admittance by Age²⁰



Source: Patient Experience Time dataset, 2023²¹

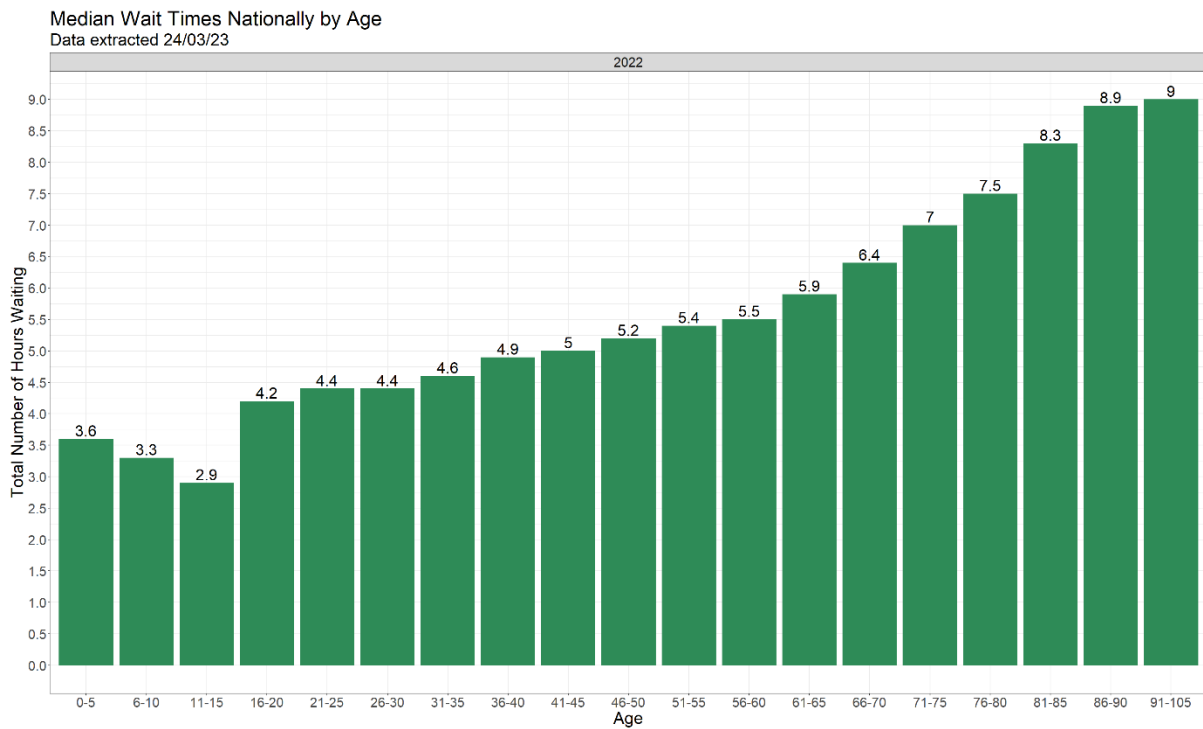
Examination of wait times by age is also informative when considering the clinical need of patients by age. In general, we would expect patients waiting longer to have less immediate needs, in line with the distribution for wait times associated with triage scores outlined in Figure 3.3. The HSE has also set targets for aggregated patient wait times within Unscheduled Care. Specifically, the HSE has set targets that 70% of all presentations should have their treatment completed within 6 hours and 85% should have their treatment completed in 9 hours. To reflect on rates of admittance and respective wait times for each patient cohort, Figure 3.12 compares wait times across age-cohorts for presentations at Unscheduled Care settings. A clear relationship between age and wait times can be observed, with older presentations having linearly higher median wait times than younger ones. Reflecting on Figure 3.11 and Figure 3.12, some key findings emerge:

²⁰ Red Line indicates a rate of admission of 25%

²¹ This graphic uses a Smoothing curve, admissions are to PET sites only, we cannot infer if it includes emergency maternity admissions through emergency departments to general acute hospitals.

- I. As patients get older the likelihood of a longer wait and admission both increase. This raises questions around the immediacy of care required for older patient cohorts; in particular, whether long waits for older patients pose a clinical risk to them, and whether the high admission rates of patients from older cohorts is appropriate.
- II. The HSE has set specific targets within the 2022 National Service Plan for 95% of patients over 75 to be admitted / discharged within six hours, and 99% of patients to be admitted / discharged within nine hours. The long wait times for older patient cohorts directly contravene this target. In 2019, it was observed that no sites achieved the 9-hour target, with many sites experiencing challenges complying with this key performance indicator (Clancy, Shine, & Hennessy, 2023).

Figure 3.12: Median Wait Times Nationally by Age: 2022



Source: Patient Experience Time dataset, 2023

How a patient arrives to an Unscheduled Care setting will influence their rate of admission as the characteristics and clinical needs of these patients will likely differ. The Patient Experience Time dataset records three distinct modes of arrival, Air Ambulance, Ambulance, and Self attendance. The number of presentations annually by air ambulance is low, with less than 200 presentations annually²². In 2022, 72% of all attendances were Self attendances with a further 18% arriving by ambulance²³. From examining admission rates by mode of arrival in Figure 3.13 we can see that patients who arrive by Ambulance are substantially more likely to be admitted, with ambulance attendances admitted 48% of the time versus 18.5% of the time for patients arriving by other means²⁴. These differences in admission rates are expected given that patients who arrive by Ambulance have been treated by a healthcare professional prior to conveyance to an Unscheduled Care setting, and likely have more acute care needs. However, the relative difference in admission rates between these two cohorts may be smaller than one would anticipate, with an observable proportion of patients arriving by ambulance not subsequently admitted. Further qualitative research should be undertaken to understand why this is the case.

²² This is based on the number of arrivals by Air Ambulance recorded within the Patient Experience Time dataset.

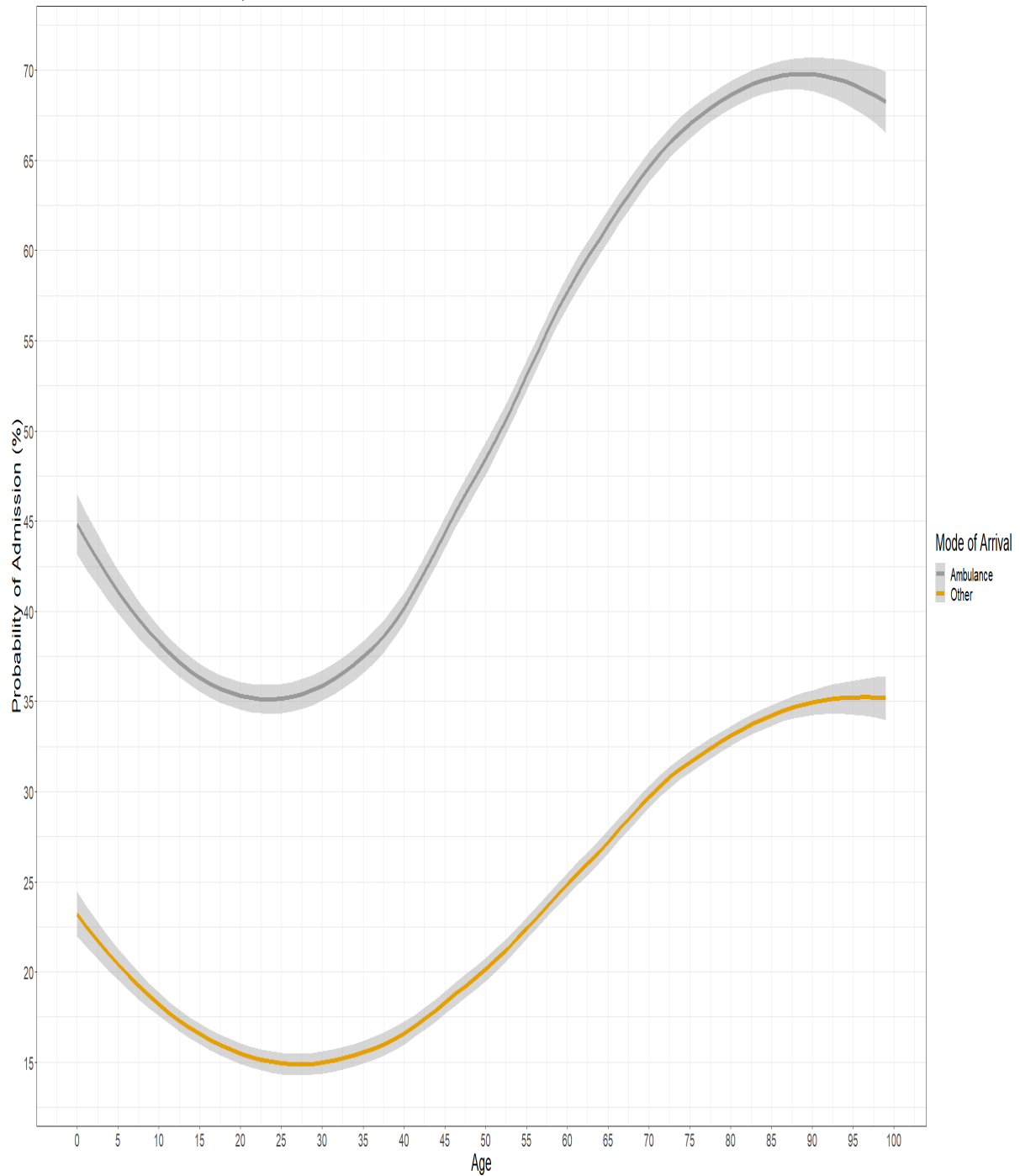
²³ The remaining 10% is unspecified attendances and arrivals by Air Ambulance

²⁴ This is the pooled average over the period 2016-2022

Figure 3.13: Admission by Mode of Arrival²⁵

Probability of Admission by Mode of Arrival: 2017-2023*

Air Ambulance is removed from this sample, this data was extracted on 15/03/23



Source: Patient Experience Time dataset, 2023

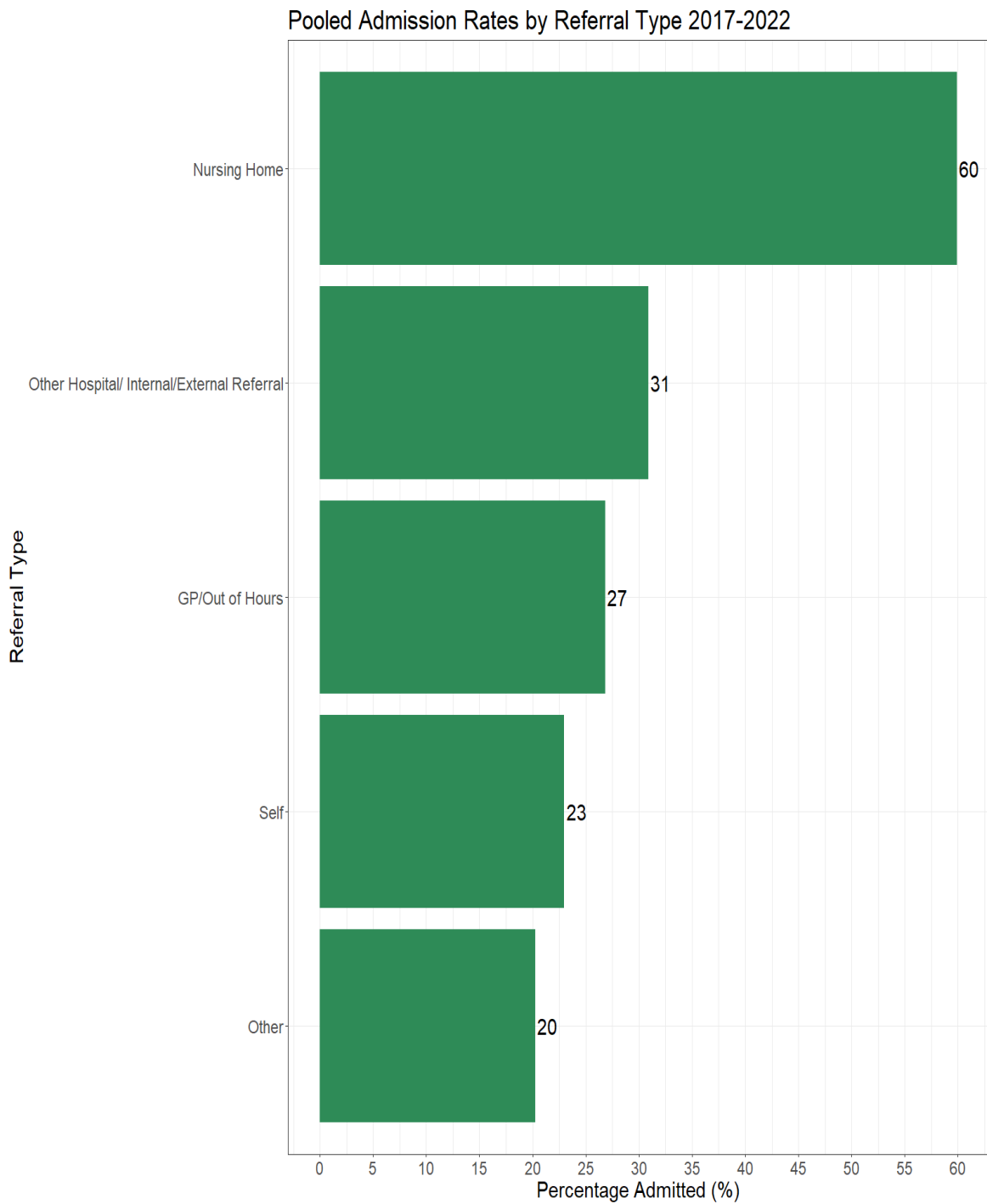
²⁵ This graphic uses a smoothing curve function fitted by R using the `geom_smooth` function.

In the next graphic, the rate of admission based on the patient's referral type is discussed. The HSE currently reports 14 different types of referrals. This has been condensed into 5 groups, which provides a brief overview of the differences in admission based on prior steps a patient has taken before presenting at an Unscheduled Care setting. Patients who attend Unscheduled Care after referral by a healthcare practitioner may be assumed to have higher clinical needs than self-referrals, given that these patients have been evaluated by a healthcare practitioner to require acute care treatment. Indeed, this is a core element of Sláintecare, with the expansion of treatment in the community expected to reduce acute care pressures overall through greater complete treatment of patients within primary care settings²⁶. In contrast to these expectations however Figure 3.14 demonstrates a limited difference in admission rates for those first receiving a GP referral, versus those who self-attend. In particular:

- I. The analysis presents findings around the rate of admission for patients referred by GPs/Out of Hours GPs relative to those patients who self-attend, with patients admitted 27% of the time versus 23% of the time for self-attendances. This minimal divergence in likelihood of admission would not be expected given individuals have seen a trained medical professional in the first instance. This raises questions around the validity of some referrals to Unscheduled Care settings by General practitioners. Unnecessary referrals of low acuity patients to Unscheduled Care settings increases the demand for treatment and can create pressures on the system. Therefore, the development of strategies and pathways to mitigate unnecessary referrals should be considered in the context of discussions around how to reduce overall Unscheduled Care demand. The literature has shown that this is a problem which is not unique to just Ireland but also Internationally, with Lasseron et al. (2021) showing substantial variation in clinician referral rates for Unscheduled Care from Out of Hours care.
- II. Patients who are referred from nursing homes have a very high admittance rate, in line with findings that age, and admittance rate are highly related.

²⁶ <https://www.hse.ie/eng/services/list/2/primarycare/enhanced-community-care/>

Figure 3.14: Admission by Referral Type²⁷



Source: Patient Experience Time dataset, 2023

²⁷ The different categories of referral include Referral type code minus 99, Referral type code minus 90, Unspecified, GP, Self, Other Hospital, Nursing Home, Private Rooms, Private Emergency Services, Other internal referral, Other external referral Out of Hours, Referral type code 90, Unknown. Low volume or unknown referrals were grouped as Other.

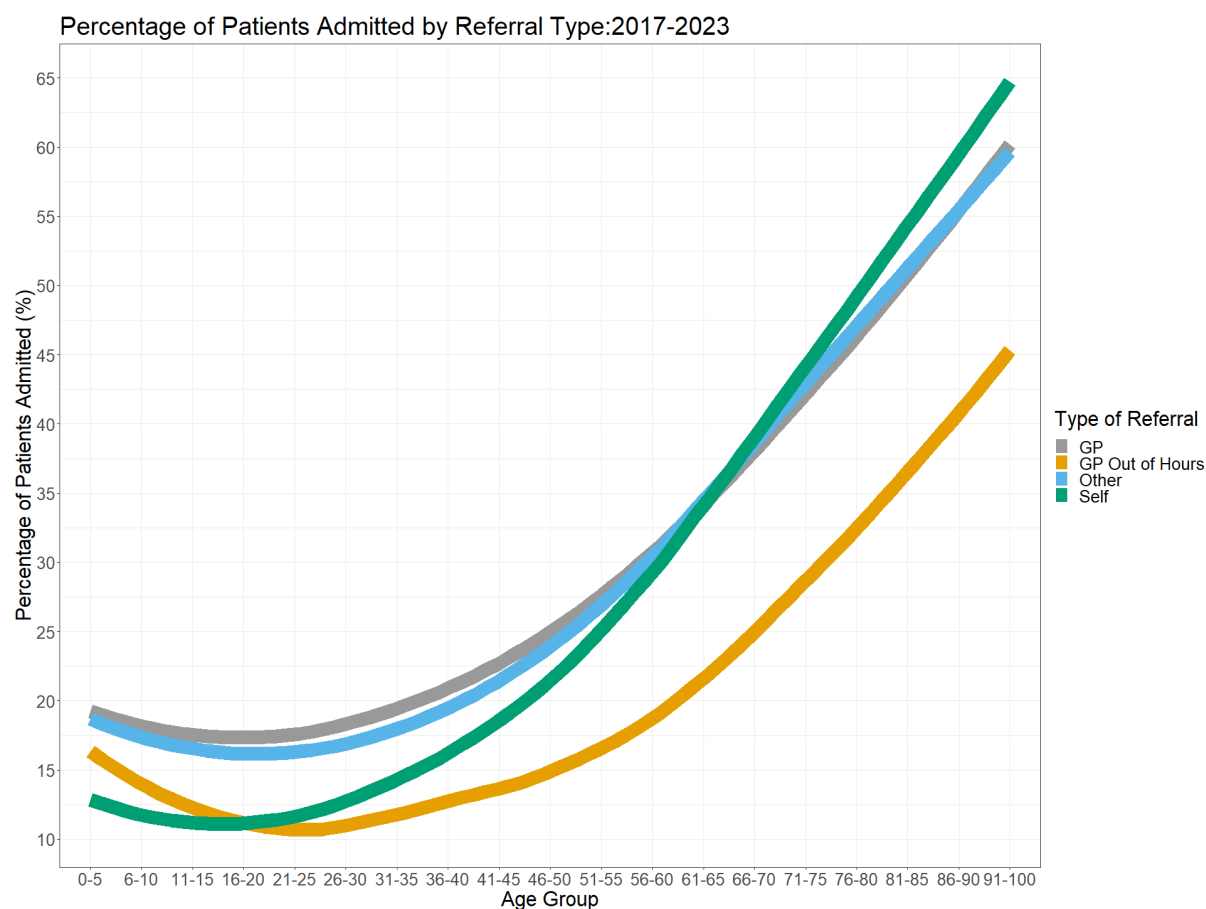
In Figure 3.15 the relationship between rate of admission and referral type is further explored by looking at its disaggregation across age groups. Understanding how rates of admission change by age and referral type enables a deeper understanding of the dynamics of the relationship observed in Figure 3.14. The implications of Figure 3.15 are as follows:

- I. Patients who attend an Out of Hours GP across most age groups are less likely to be admitted to hospital than patients who self-attend. This finding is in contrast with our expectation that GP referred patients would be more likely to be admitted to hospital, given that they have already received a form of triaging from a clinician. Such an outcome may be driven by a number of factors including the characteristics of patients utilising GP OOH services relative to those that self-refer, the availability of GP OOH services in certain regions, and access to routine diagnostic services in non-acute care settings (e.g., blood tests, X-rays) versus those requiring referral. The distributions of attendances in both cohorts follows a similar right skewed distribution with young children making up a high proportion of total referrals in both groups.
- II. The likelihood of patients being admitted increases with age as seen in prior graphics, however the divergence in rates of admission is pronounced with Out of Hours GP referrals admitted approximately 37.5% of the time for patients aged over 80 versus 55% of the time for Self-attendances.

These findings draw into question the effectiveness of expansion of primary care services as a means to reduce acute hospital pressures²⁸. While a more qualitative research effort would be required to understand why admission rates for persons with and without a referral are similar and make definitive conclusions to this effect, such an outcome initially motivates consideration as to whether primary care can serve as an effective substitute for acute care services.

²⁸ This paper cannot evaluate the effect of community diagnostics and multi-disciplinary teams in the community on reducing attendance rates at Unscheduled Care settings.

Figure 3.15: Admission by Referral Type and Age



Source: Patient Experience Time dataset,2023

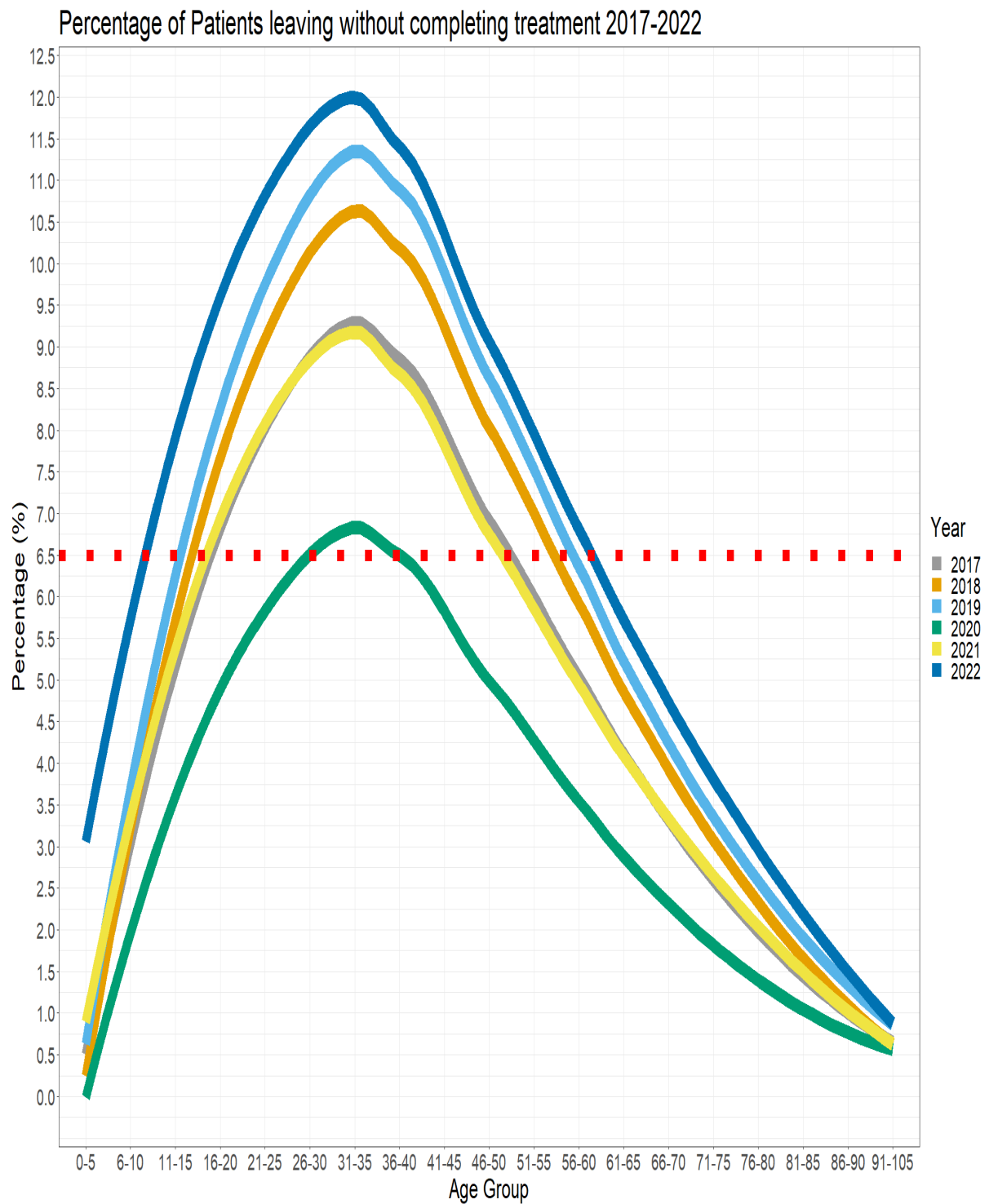
3.6 Incomplete Treatment within Unscheduled Care

Incomplete treatment is defined as “Persons who leave an Unscheduled Care setting before being discharged by a Clinician”. This is an issue in the delivery of healthcare services, as persons who leave before completion of treatment may be foregoing appropriate assessment and care for their illness. Equally, from an operational perspective, persons who present and subsequently leave before completion of treatment may represent an ineffective use of hospital resources. In recognition of this problem, the HSE has set a performance target related to the level of incomplete treatment in each hospital, aiming for hospitals to have less than 6.5% of persons who present leave before completion of their treatment. As noted in Clancy et al. (2023) however, in 2019 9 out of 26 hospitals were in excess of this target, including St. James Hospital being far in excess of it. In respect of both the problems associated with incomplete treatment, and the non-adherence of some hospital’s relevant targets, this section aims to examine:

- I. The rates of Incomplete Treatment by Age and how these compare to the HSE target of 6.5%. This can enable the identification and potential development of targeted aged-based interventions for incomplete treatment which are tailored to the populations who are most likely to leave without completing treatment.
- II. The average time patients wait prior to leaving without completing treatment, with this being indicative of both the performance of the hospital relative to HSE waiting time targets, and whether a relationship exists between long waits and the decision to leave prior to completion of treatment.
- III. The average time patients wait by referral type prior to leaving without treatment, with this providing an understanding of whether patients' willingness to wait is influenced by the level of engagement they had with medical professionals prior to attending an Unscheduled Care setting.

Figure 3.16 presents the percentage of patients leaving without completing treatment by age group. Across all years excluding 2020, patients from the age of 16 to 55 have greater than a 6.5% chance of leaving without completing treatment. The level of incomplete treatment was highest in 2022, with persons of every age more likely to leave before the completion of their treatment in 2022 relative to previous years. For all years, the distribution of persons leaving before completion of treatment is the same, rising from virtually zero within the 0-5 age band to peak for persons aged 31-35 at between 9-12% (excluding 2020).

Figure 3.16: Percentage of Patients leaving without completing treatment 2017-2022²⁹

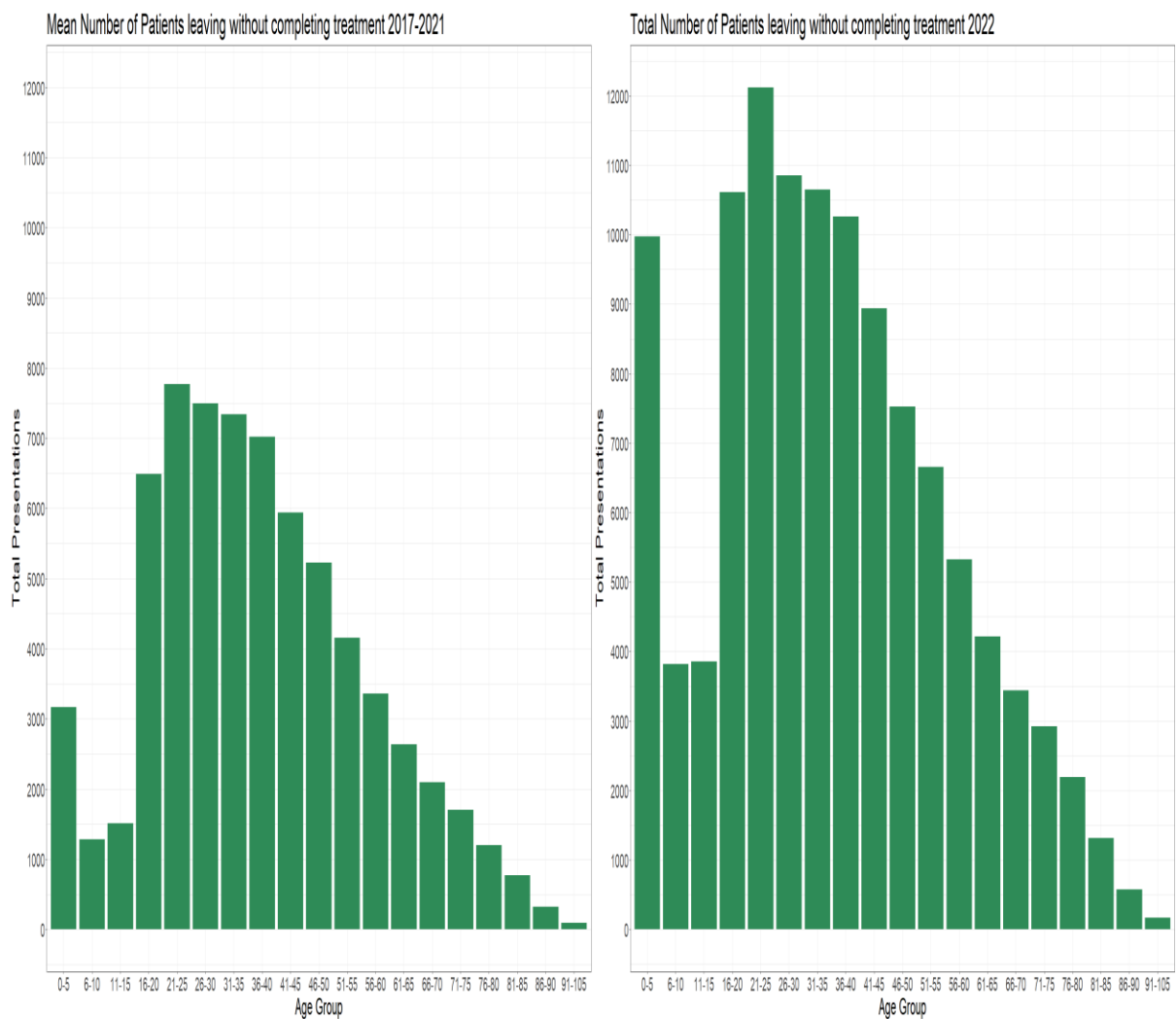


Source: Patient Experience Time dataset, 2023

²⁹ The red line represents the HSE target of 6.5% of patients leaving without completing treatment.

Understanding the percentage of patients leaving without treatment provides an indicative understanding of the age groups which have the greatest propensity to leave without finishing treatment and provides an understanding of where targeted policy intervention may be most impactful. Figure 3.17 provides the quantum of patients who do not complete treatment, complimenting the analysis presented in Figure 3.16. The distribution of patients leaving without completing treatment is right skewed with a clustering of high levels of incomplete treatment in patients aged 20-45 years of age. This aligns with our expectations, given the population profiles and presentation rates in general of these age groups (Figure 3.7 & Figure 3.8).

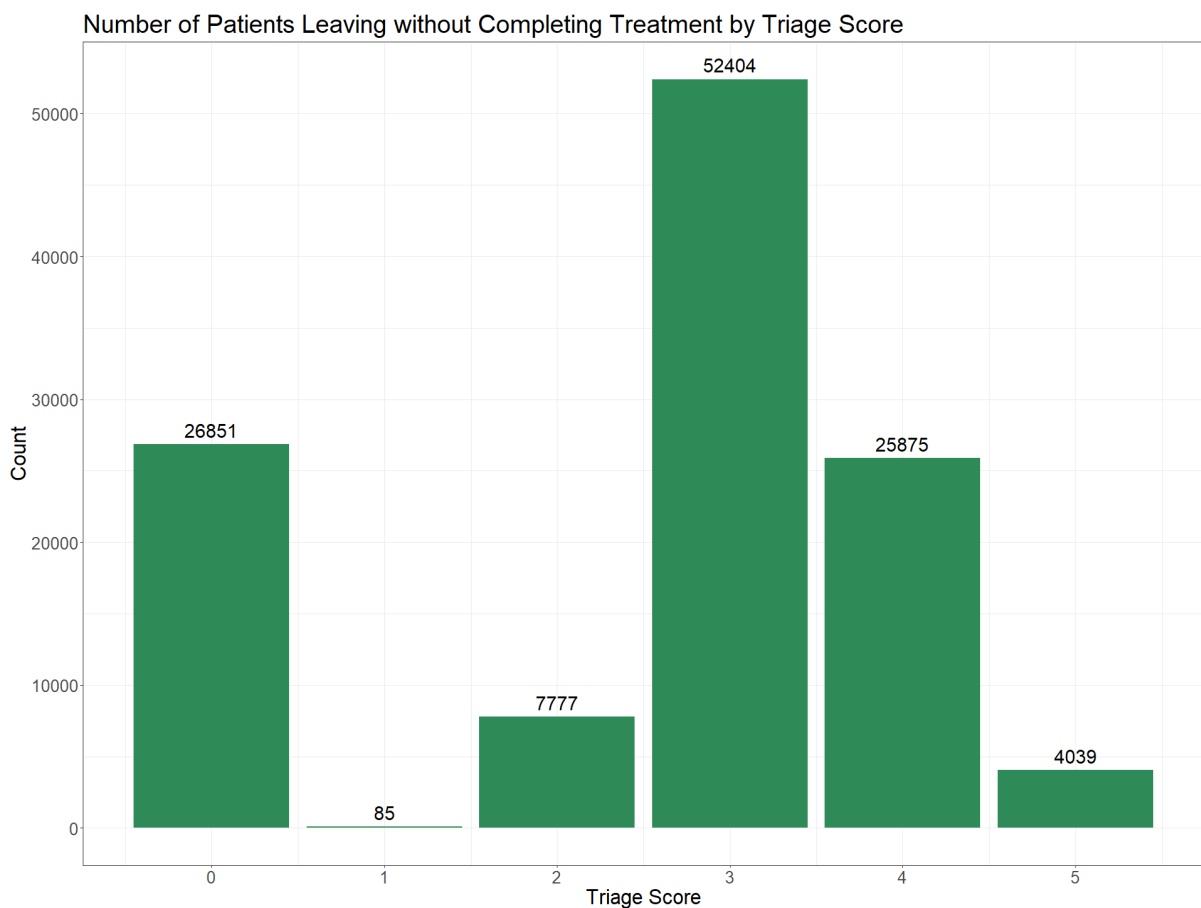
Figure 3.17: Number of Patients Leaving Without Completing Treatment by Age



Source: Patient Experience Time dataset, 2023

Understanding how many patients leave without completing treatment is useful in its own right. However, our understanding can be further improved by also considering the characteristics of patients who leave, such as the level of acuity associated with these patients. If patients leaving prior to completion of treatment have a lower acuity score, then this may indicate that more appropriate and expedited treatment of these patients could take place in primary care settings or local injury units. Figure 3.18 evaluates the number of patients leaving before completion of treatment by triage score to provide insight into this query. From the graphic, we can see that most patients who leave prior to the completion of their treatment have lower acuity ailments on average, with 92% of all attendances in 2022 who left without completing treatment having a Manchester Triage Score of “Urgent” or below³⁰. This highlights the opportunity to reduce rates of incomplete treatment and general hospital pressures through the treatment of a greater number of patients in alternative settings rather than requiring presentation at Emergency Departments.

Figure 3.18: Persons Leaving Before Completion of Treatment by Triage Score: 2022



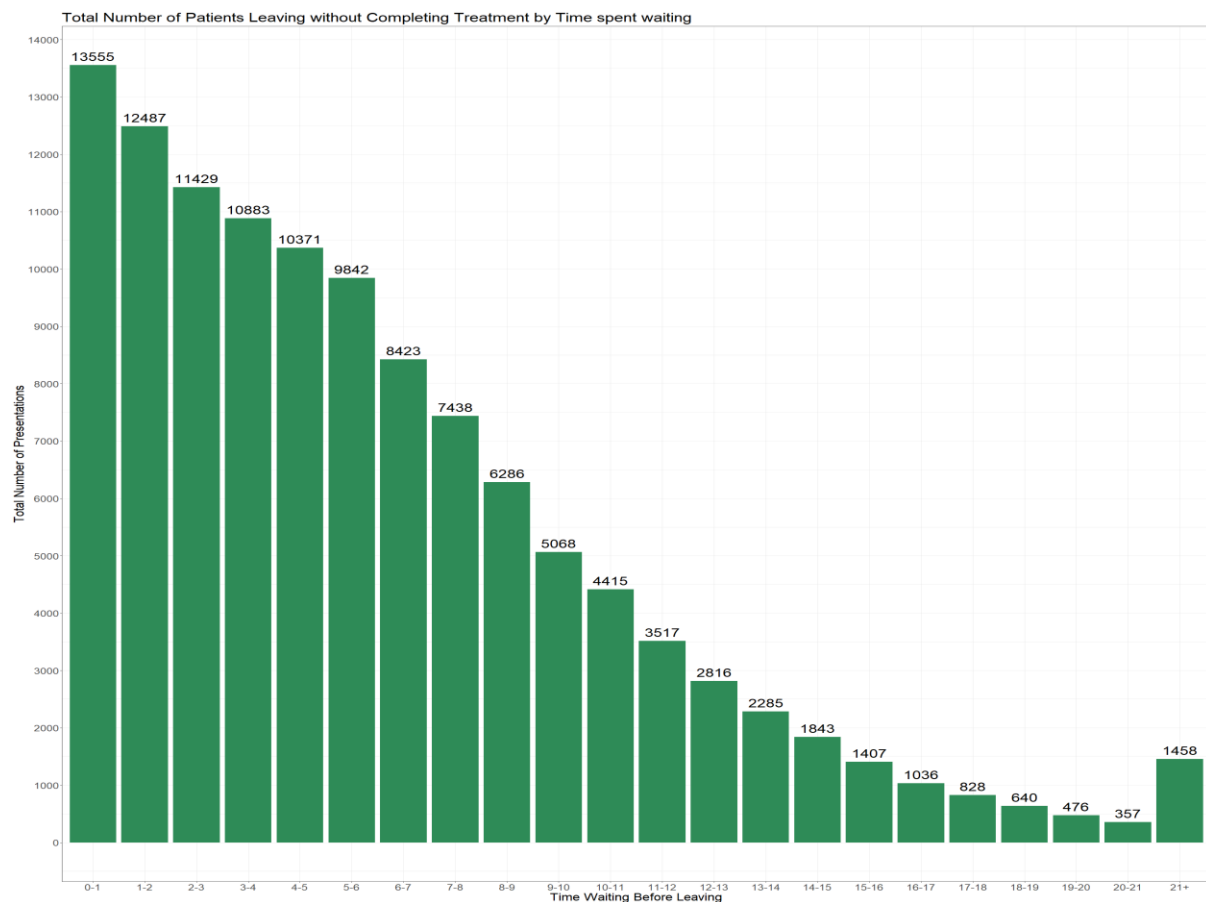
Source: Patient Experience Time dataset, 2023

³⁰ This is calculated for presentations with a triage score.

Understanding how long a patient waits prior to leaving without completing treatment can help inform whether the patient left due to delays in prompt treatment, or due to a lack of a willingness to wait a greater amount of time. Figure 3.19 evaluates this, presenting the total number of patients leaving by wait time (grouped by hour) in 2022. Some clear insights from the graphic can be seen:

- I. As time progresses the number of patients leaving diminishes, with the highest number of patients leaving prior to completion of treatment within the first hour. 32% of all patients who do not complete treatment leave within the first 3 hours.
- II. A high proportion of patients (34%) leave prior to completion of treatment after waiting over six hours. Given that these patients have waited for an extended period in an Unscheduled Care setting, there may be more considerable clinical consequences of their decision to leave without receiving medical treatment, with the potential exacerbation of illnesses and the need to re-present to this setting emerging.
- III. There is a strong relationship between wait times and rates of incomplete treatment, indicating that a reduction in wait times would result in lower levels of incomplete treatment.

Figure 3.19: Number of Patients Leaving by Total Time Waiting (Hours):2022

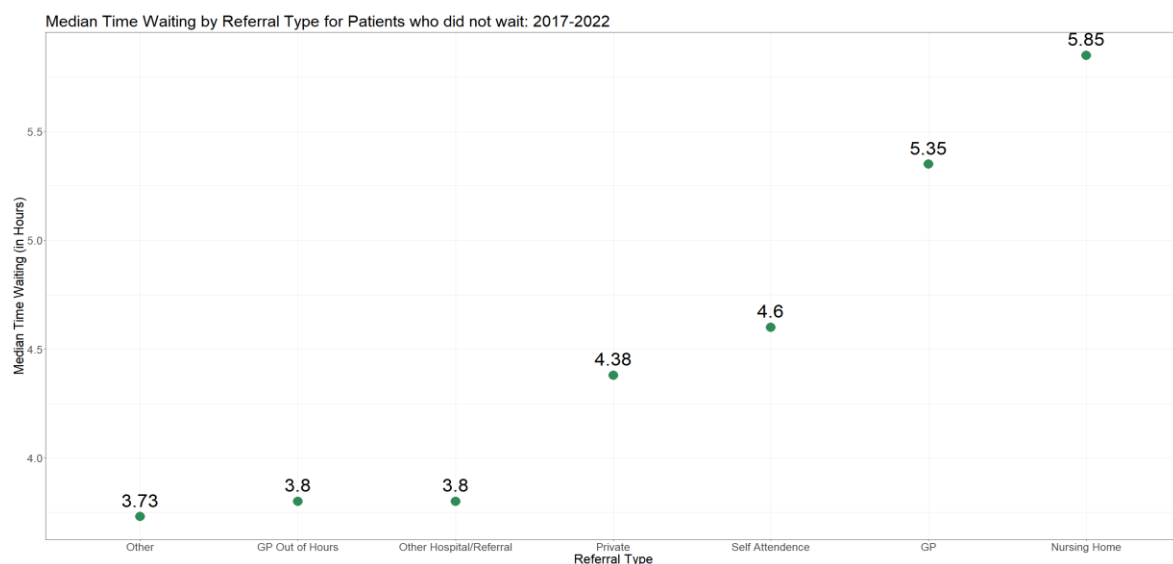


Source: Patient Experience Time dataset,2023

The interaction between how a patient is referred and the amount of time they wait prior to leaving without completing treatment can provide additional insights into the behaviour of these patients and how prior engagement with the health system may influence their decision to leave. Figure 3.20 presents this interaction, demonstrating a clear relationship between a patient’s willingness to wait and the type of engagement a patient has had prior to arriving at an Unscheduled Care setting. The key findings of this graphic include:

- I. Patients who attend an Out of Hours GP prior to attending an Unscheduled Care setting wait 3.8 hours before leaving, 0.8 hours less than the time persons who self-attend wait before leaving on average (4.6).
- II. There is a notable difference in patient wait times prior to leaving between those with a GP referral, versus those referred by an Out of Hours GP. Patients referred by a GP wait on average 1 hour more than patients referred by an Out of Hours GP prior to leaving before completion of treatment. This could be attributable to differential patient characteristics accessing either service, or differences in the perception of illness severity from patients presenting with different referral types.
- III. Patients who are referred to an Unscheduled Care setting from a nursing home have the greatest willingness to wait. These patients wait on average 5.85 hours before leaving without completing treatment.

Figure 3.20: Average Time Waiting by Patients Leaving without Completing Treatment by Referral Type



Source: Patient Experience Time dataset, 2023

3.7 Differences in Attendance by Hour of Arrival and Day of the Week

Understanding how demand changes hourly and over the course of the week has important implications for the time-sensitive capacity requirements of the acute care system, and the associated workforce rostering requirements within this setting. Differences in outcomes of patients that are associated with time / day of arrival may indicate the opportunity for more effective treatment, either through influencing patient-arrival time behaviour, or making changes to workforce availability at certain intervals. This is also a relevant consideration to surge capacity and patient flows; with patient arrivals during periods of high occupancy / low discharge likely leading to longer wait times and longer length of stay, relative to persons arriving during other periods.

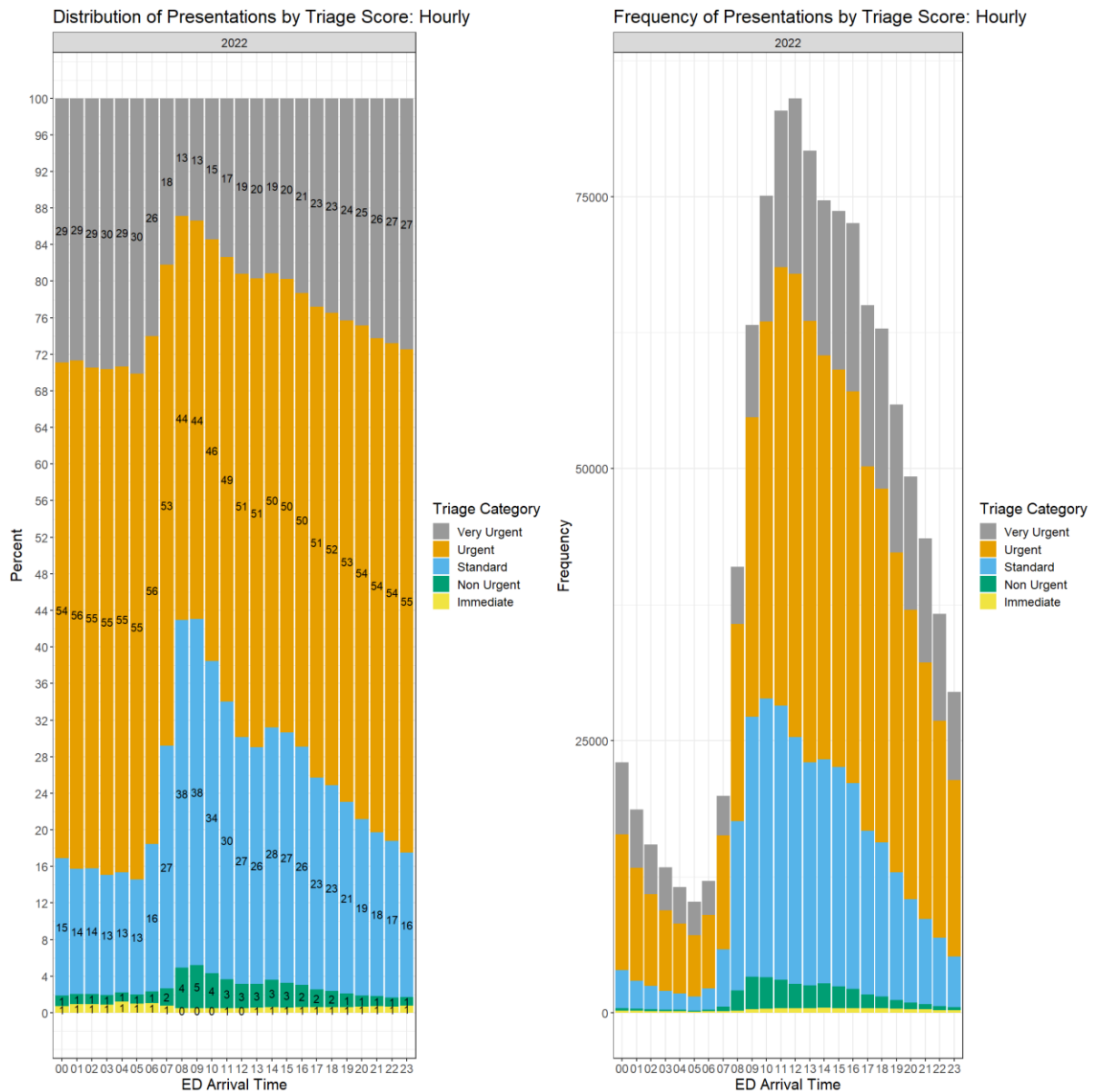
This section aims to appraise the differences in patient outcomes that relate to the hour and day of presentation of a patient. Analysis in this section includes:

- I. Distribution of Attendances by Hour of Arrival
- II. Median Waiting Time by Triage Category and Time of Arrival
- III. Rate of Admission by Hour of Arrival
- IV. Total Presentations by Day of the Week
- V. Admission rates by triage score and day of the week.

To begin, Figure 3.21 shows the distribution of presentations and the proportion of patients in each triage category at a given time of arrival. Changes to the quantum and clinical needs of patients over time has clear implications for acute care capacity requirements at a given time, and associated workforce requirements. There are two things of note presented in the graphic:

- I. The number of presentations for low acuity presentations markedly increases as regular working hours commence. We can see for example that the proportion of patients in the “Standard” triage category (the second lowest triage score) increases from 13% of presentations at 5am, to a peak of 38% of presentations at 9am. This then falls back to below 20% after 9pm.
- II. The peak time for Unscheduled Care presentations is midday with presentations 4 times as high at 12pm versus 7am. Equally, nighttime attendances (00:00-05:00) are notably low, averaging below a quarter of peak presentations during this time.

Figure 3.21: Distribution of Presentations by Hour and Triage Score



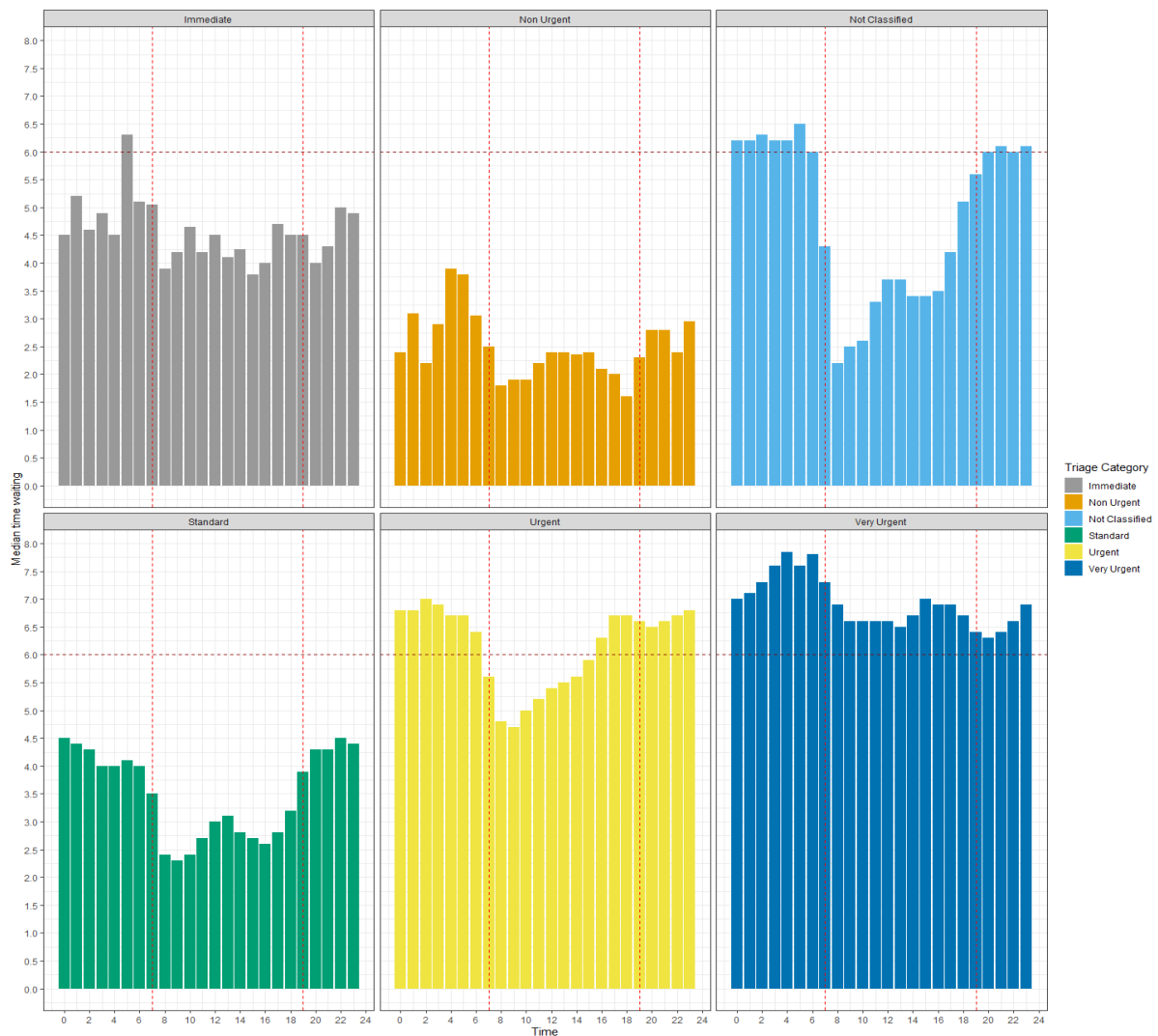
Source: Patient Experience Time dataset, 2023

It is also useful to examine wait times by hour of arrival for patients with this further disaggregated by triage level, provided in Figure 3.22. This graphic provides some key insights into the effect that time of arrival has on median waiting time for patients:

- I. Across all triage categories, patients who arrive outside of core hours wait longer than comparable patients who arrive inside of the hours of 07:00-19:00 daily. This could be indicative of long wait times arising during shift change-over times for staff within acute hospitals.

- II. Patients who arrive with a triage score of “Immediate” wait longer for completion of care within an Unscheduled Care setting (5 hours vs 4 hours) when they arrive during the night versus during the day. A longer wait time for patients of this type may pose a patient safety risk and could represent an inequity in how healthcare services are delivered within acute hospitals.
- III. As can be noted from Figure 3.21, the levels of presentations fall between 19:00 and 06:00. This demonstrates that the longer wait times for patients during this period likely relates to a hospital’s ability to process them (potentially because of staff requirements) rather than because of demand-side factors.

Figure 3.22: Median Waiting Time by Triage Category by Time of Arrival³¹



Source: Patient Experience Time dataset, 2023

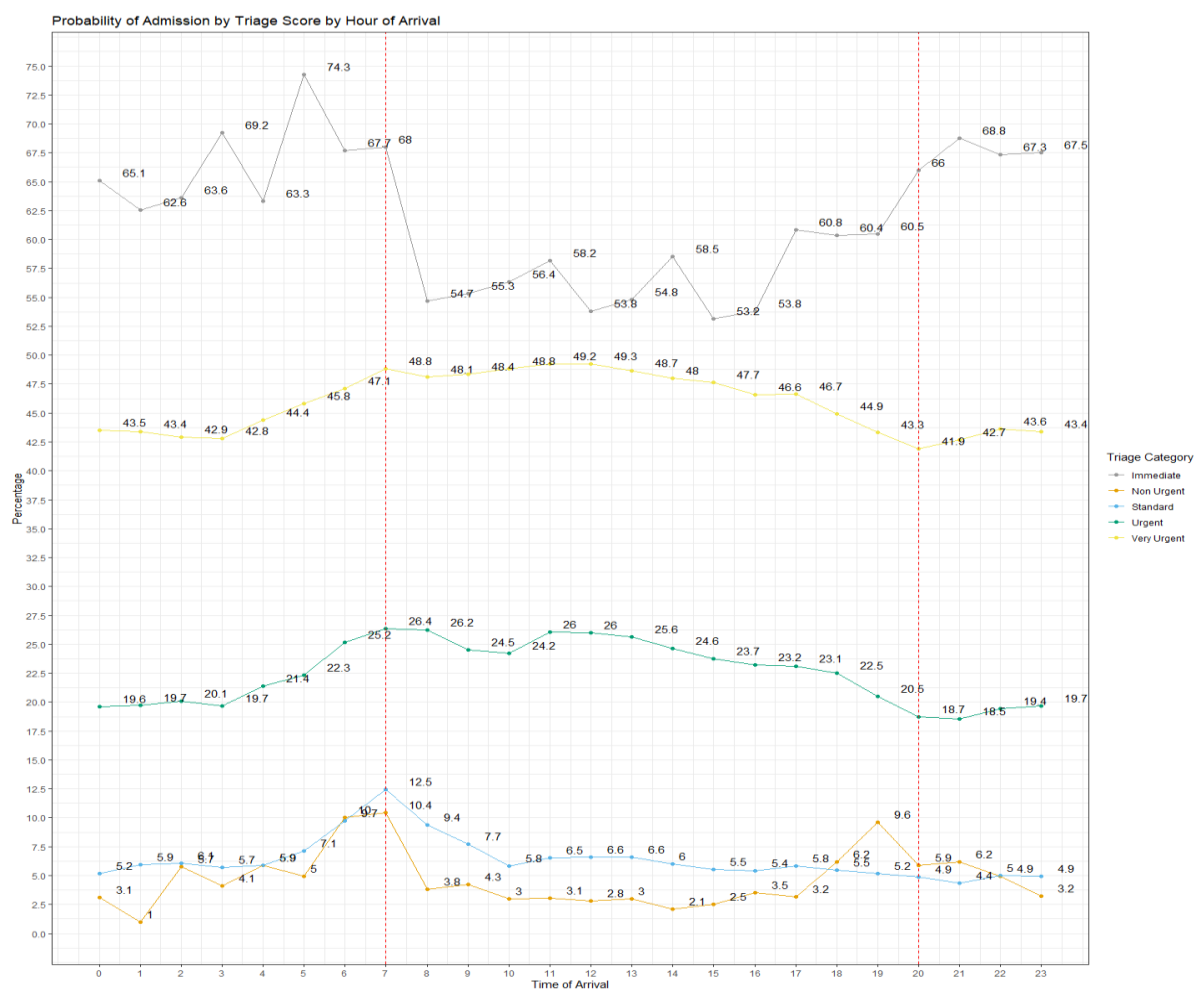
³¹ Indicative shift pattern is assumed to be 07:00-19:00

As discussed, the volume, acuity and wait times of presentations varies by time of arrival to an Unscheduled Care setting. We can also examine the cumulative impact of these factors on rates of admission by hour of arrival. This is useful both as another indicator of patient clinical need, and to inform inpatient bed demand over the course of a day. Figure 3.23 provides an examination of this relationship, demonstrating:

- I. Patients who arrive before 05:00 with a triage score of “Immediate” are most likely to be admitted to an Unscheduled Care setting, whereas a comparable patient who arrives during the day (07:00-20:00) is 20% less likely to be admitted.
- II. Patients with triage scores of “Urgent” and “Very Urgent” are more likely to be admitted if they present during ‘core’ hours.

Any divergence in admission rates by hour of admission draws into question whether variances in non-clinical factors, such as staff rotations or bed availability is unduly influencing admissions behaviour.

Figure 3.23: Probability of Admission by Time of Arrival and Triage Score



Source: Patient Experience Time dataset, 2023

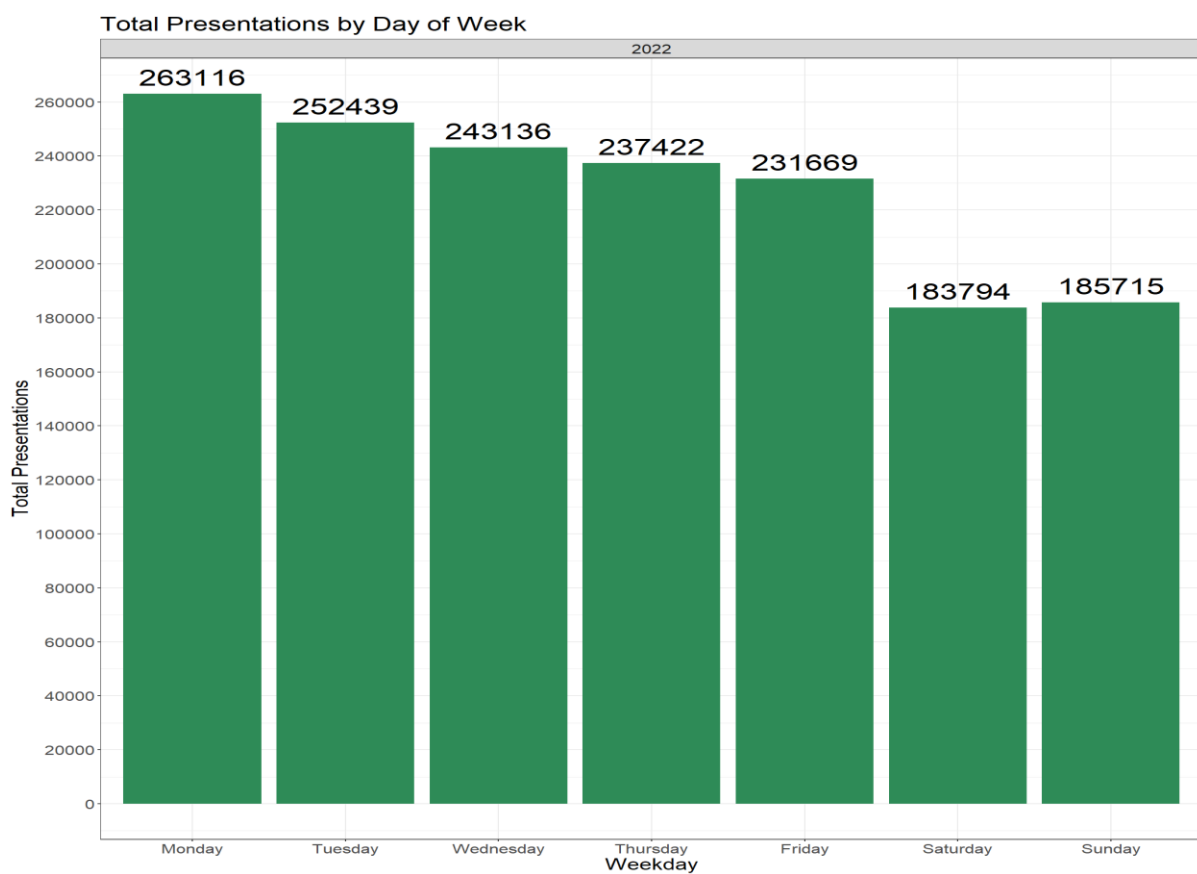
To further our understanding of the dynamics of demand in Unscheduled Care settings over time we can examine how the volume of presentations to Unscheduled Care settings changes by hour and by day of the week. Specifically, we examine:

- I. Total Presentations by Day of the Week
- II. Rates of Admission by Triage Score and Day of the Week

To understand how demand changes over the course of the week, Figure.3.24 presents the quantum of presentations by day in 2022. We observe the following:

- I. Mondays are the busiest day within Unscheduled Care settings, with 263,000 presentations on Mondays over the year compared to an average of 231,000 presentations.
- II. Presentations on weekends are notably lower than weekdays falling from 4787 average weekday presentations to 3620 average weekend presentations. This has operational implications for Unscheduled Care and acute care delivery, given that resourcing must be commensurate to the level of prevailing demand by day.

Figure 3.24: Total Presentations by Day of Week 2022

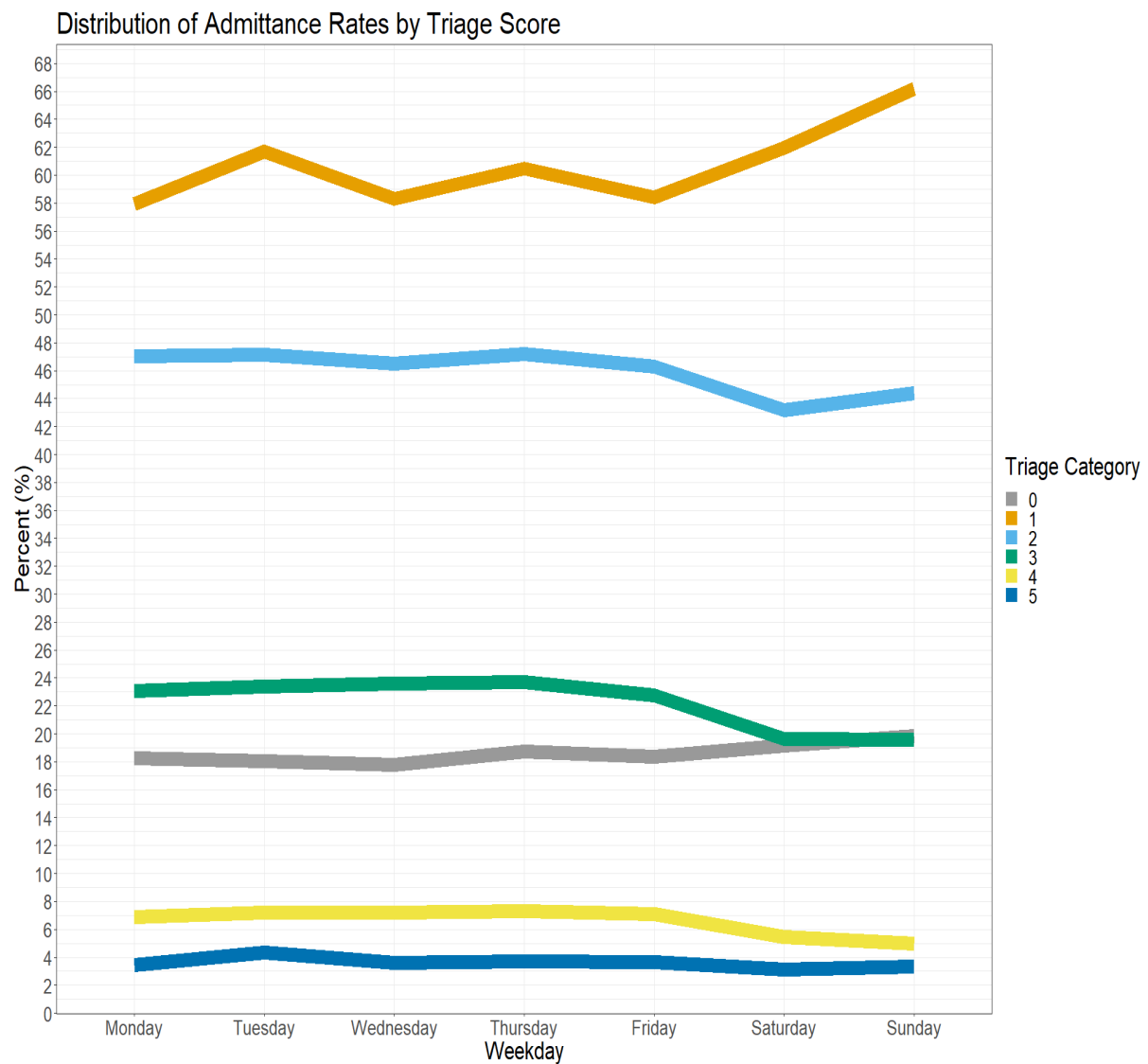


Source: Patient Experience Time dataset, 2023

We can also examine the evolution of admission rates by day of the week, as in Figure 3.25. This demonstrates the following:

- I. Patients with a triage score of “Immediate” have an admission rate of 66% on Sundays, whereas a similar patient who presents on a weekday such as a Monday or a Wednesday have a rate of admission of approximately 58%.
- II. Patients with triage scores of “Very Urgent” or below are less likely to be admitted if they present on a weekend than a weekday. A potential driver of this may be that there is limited access to senior decision-makers and a reduced level of diagnostic capacity at the weekends.

Figure 3.25: Admission Rates based on Triage Score by Day of the Week



Source: Patient Experience Time dataset, 2023

3.8 Key Findings

I. **Unscheduled Care Demand and Seasonality:**

- a. Over the period 2010-2022 demand has increased by 45% rising from 1.1m in 2010, to 1.6m presentations in 2022.
- b. Monthly presentations are roughly constant over the year (excluding COVID-19 years), with demand peaking in March, May, and October. This finding raises questions around the Winter surge and presents how demand across the year is constant, however this analysis cannot evaluate the clinical characteristics of patients further than triage scores.
- c. Future work may evaluate the composition of demand within these months by Urgency Related Group once such data becomes available.

II. **Acuity of Presentations:**

- a. 29% of Patients to Unscheduled Care settings in 2022, had a triage score of “Standard” (triage category 4) or “Non-Urgent” (triage category 5). This presents an opportunity for the potential to treat these patients in enhanced community care settings and this consideration warrants further investigation.
- b. Alongside an observable proportion of patients being of low acuity. These patients are primarily concentrated among presentations from younger age cohorts, with a patients’ likelihood of having a higher triage score increasing with age.

III. **Admission Rates of Patients:**

- a. This section has evaluated rates of admission across multiple facets, when evaluating admission by triage score it becomes clear that the likelihood of admission is linked to clinical need; for example, triage category 1 presentations are admitted roughly 60% of the time, while patients of triage categories 4 and 5 are admitted 6% and 4% of the time respectively.
- b. The admission rates of patients are directly related to their age. Patients aged under 50-55 having less than a 25% chance of being admitted compared to a 55% chance of admission for those over 80. The low admission rate of younger persons demonstrates an opportunity to substitute care for these patients towards non-acute settings.
- c. Patients arriving at an Unscheduled Care setting with a GP or out of hours GP referral are only slightly more likely to be admitted (27%) than patients who self-attend (23%). This minimal divergence in likelihood of admission is surprising, given that patients

who are referred have first been assessed by a medical practitioner. This observation warrants further research and evaluation at a much granular level.

- d. Patients who attend an Out of Hours GP across most age groups are less likely to be admitted to hospital than patients who self-attend.

IV. Hour of Arrival and the Composition of Demand:

- a. The number of presentations from low acuity patients markedly increases as regular working hours (8am onwards) commence in Unscheduled Care settings. The proportion of patients in the “Standard” triage category (the second lowest triage score) increases from 13% of presentations at 5am, to a peak of 38% of presentations at 9am. This then falls back to below 20% after 9pm.
- b. Across all triage categories, patients who arrive outside of core hours wait longer than comparable patients who arrive inside of the hours of 07:00-19:00 daily. This could be indicative of long wait times arising during shift change-over times for staff within acute hospitals.
- c. Patients who arrive before 05:00 with a triage score of Immediate are most likely to be admitted to Hospital from an Unscheduled Care setting, whereas a comparable patient who arrives during the day is 20% less likely to be admitted.

V. Patients who Do Not Wait to complete treatment:

- a. Most patients who leave prior to the completion of their treatment have low acuity ailments, with 92% of all attendances in 2022 who left without completing treatment having a Manchester Triage Score of “Urgent” (triage category 3) or below. This highlights the opportunity to reduce rates of incomplete treatment and general hospital pressures through the treatment of a greater number of patients in alternative settings rather than requiring presentation at Emergency Departments.
- b. As time progresses the number of patients leaving an Unscheduled Care setting before completion of their treatment diminishes, with the highest number of patients leaving prior to completion of treatment within the first hour. 32% of all patients who do not complete treatment leave within the first 3 hours. A high proportion of patients (34%) leave prior to completion of treatment after waiting over six hours.
- c. In general, there is a strong relationship between wait times and rates of incomplete treatment indicating that a reduction in wait times would result in lower levels of incomplete treatment.

3.9 Policy Recommendations

- I. Explore options to reduce short-term ED pressures – given the high level of demand for this setting experienced in 2022 relative to previous years.
- II. Explore strategies to reduce presentations to Unscheduled Care from low triage patients. – 29% unnecessary attendances from these groups.
- III. Explore strategies to reduce presentations to Unscheduled Care from paediatric and younger patients (under 55) – as these patients are substantially less likely to be admitted than older ones.
- IV. Move away from allocation of additional resources for surge only in the winter period – given that this is inconsistent with presentation rates by month.
- V. Ensure alignment of strategies to reduce ED pressures with the size of the population cohort an intervention is intended to affect. For example, a greater emphasis should be placed on targeted interventions to reduce presentations from those under 5, relative to those in older age cohorts given the high level of utilisation and volume of presentations from this patient cohort.
- VI. Explore whether unnecessary referrals to Unscheduled Care settings from general practitioners are occurring, and whether these could be reduced.
- VII. Investigate why the admission rates of persons with GP out-of-hours referrals are similar to those who self-refer, given that these patients have already received an assessment from a medical practitioner and could therefore be expected to have a higher admission probability.
- VIII. Explore whether persons who leave an Unscheduled Care setting prior to completing their treatment; particularly those who wait an extended period are likely to experience an exacerbation of their medical condition and face potential readmission as a result of their decision to leave.
- IX. Explore whether inequities in patient outcomes by time of arrival (e.g., wait times, admittance rates) have additional negative clinical consequences for patients, and whether these

outcomes can be addressed through targeted resource allocation (vis-à-vis changes to rostering of staff commensurate to non-peak hour Unscheduled Care demand).

- X.** Explore whether staffing of hospitals is commensurate to the sizeable (although lower) level of Unscheduled Care activity that occurs on weekends versus weekdays.

- XI.** Expedite the introduction of Urgency Related Group (URGs)³² classification for patients arriving at unscheduled care settings in Ireland, as this would enable the reason for patient presentation and associated resource utilisation for each to be measured and analysed.

³² <https://www.ihaqpa.gov.au/health-care/classification/emergency-care/urgs-and-udgs/urgency-related-groups-and-urgency-disposition-classification-development>

4 Regional Level Analysis of Unscheduled Care Presentations

4.1 Introduction

The Department of Health & HSE are in the process of introducing "Health Regions" for the publicly funded component of the healthcare system in Ireland. The introduction of Health Regions is motivated by the need for better integration of community and acute care service governance with the aim of facilitating greater healthcare service delivery in the community. The geographies of the six Health Regions are based on population data including how people currently access healthcare services while ensuring disruption to existing patient flows is minimised. The objectives of Health Region implementation are aligned with Sláintecare's overall aims and objectives and are intended to:

- I. increase the integration of community and acute services.
- II. introduce a population-based approach to service planning.
- III. improve clinical governance.
- IV. improve corporate governance and accountability.

The six Health Regions to be introduced are comprised of the following areas:

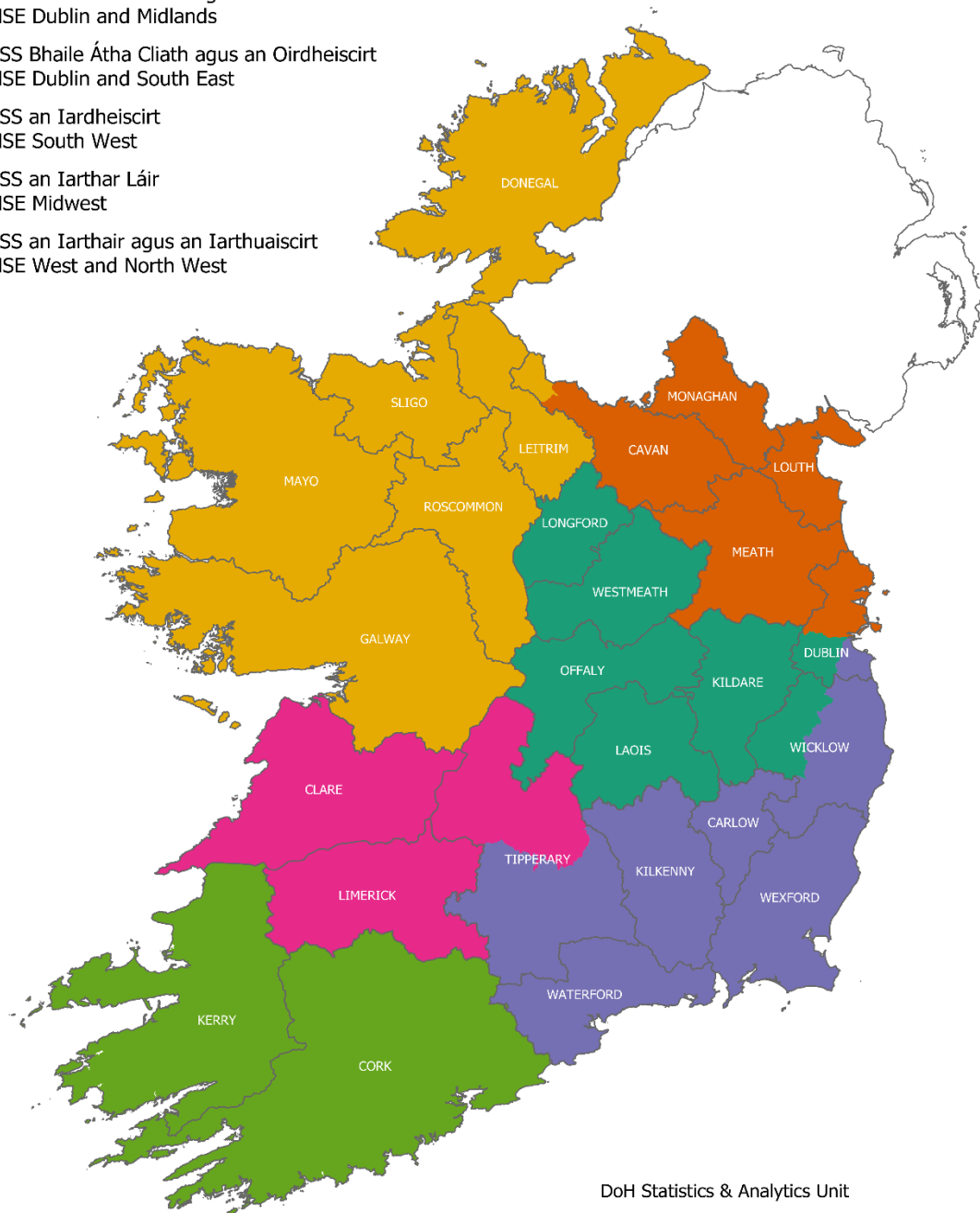
- I. **Dublin Northeast (DNE):** North Dublin, Meath, Louth, Cavan, and Monaghan.
- II. **Dublin and Midlands (DML):** Longford, Westmeath, Offaly, Laois, Kildare, and parts of Dublin and Wicklow.
- III. **Dublin and Southeast (DSE):** Tipperary South, Waterford, Kilkenny, Carlow, Wexford, Wicklow, part of South Dublin.
- IV. **Southwest (SW):** Kerry and Cork.
- V. **Midwest:** Limerick, Tipperary, and Clare.
- VI. **West and Northwest (WNW):** Donegal, Sligo, Leitrim, Roscommon, Mayo, and Galway.

The 6 Health Regions are further broken down into 96 Community Healthcare Networks (CHNs). CHNs deliver primary and community services to an average population of 50,000 people each. The CHN framework supports multi-disciplinary teams to bring decision-making closer to the point of care. CHNs also function to provide targeted and coordinated care based on the identified health and social care needs of local communities. Information on the characteristics and demographics of the Health Regions can be found in McCarthy et al. (2022). A map of the Six Health Regions can be seen below:

Figure. 4.1: Map of the Health Regions

HSE Health Regions

- FSS Bhaile Átha Cliath agus an Oirthuaiscirt
HSE Dublin and North East
- FSS Bhaile Átha Cliath agus Lár na Tíre
HSE Dublin and Midlands
- FSS Bhaile Átha Cliath agus an Oirdheiscirt
HSE Dublin and South East
- FSS an Iardheiscirt
HSE South West
- FSS an Iarthar Láir
HSE Midwest
- FSS an Iarthair agus an Iarthuaiscirt
HSE West and North West



Source: Department of Health, Statistics and Analytics Unit, 2023

To provide further context to the distribution of Local Injury Units and 24-Hour Emergency Departments across the regions, Table.4.1 below presents this information. The Dublin Northeast Region has the greatest number of facilities with 3 Local Injury Units and 6 Emergency Departments, whereas CHI has 1 Local Injury Unit and 3 Emergency Departments serving the paediatric population of the Greater Dublin Region and Nationally in some instances³³.

Table.4.1: Composition of Unscheduled Care by Region

Health Region	Local Injury Unit	24-Hour Emergency Department
DNE	3	6
DML	1	6
DSE	2	4
SW	3	3
Midwest	4	1
WNW	1	6
CHI	1	3

Source: Authors Calculations

As the Reconfiguration of the Hospital Groups and CHOs into Health Regions progresses, the need to understand the health needs, demographics and idiosyncratic pressures facing each of these regions will be important to facilitate effective regional and national-level planning. Building on the analysis and findings in Section 3, this section explores the characteristics of Unscheduled Care demand facing each region uniquely. Through thorough examination of these characteristics at a regional level we are able to gain a better understanding of where policy responses can be targeted to ensure a maximal positive impact. Furthermore, regionalised analysis can also guide national-level investment decisions about where new facilities and staff are likely to be most needed within the country. Specifically, this section examines:

- I. Total presentations by Region at Unscheduled Care Settings.
- II. Distribution of Presentations by Triage Scores in Emergency Departments by Region
- III. Median Waiting Times in Emergency Departments by Region
- IV. Rate of Admission of Presentations by Age and Region

³³ Patients traditionally would arrive by Ambulance or Self-present from within the Greater Dublin Region, however patients may be referred to CHI for specialist treatment and bypass the local adult and paediatric emergency department.

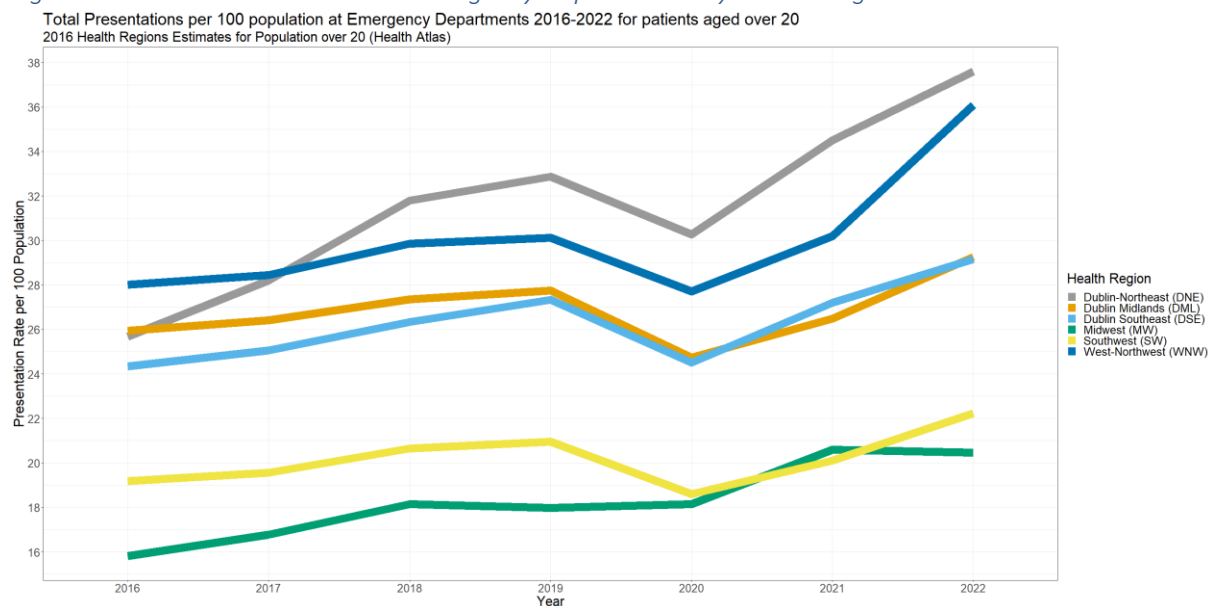
- V. Rate of Admission by Referral Type and Region
- VI. Composition of Attendances by Referral Type and Region

4.2 Regional Unscheduled Care Demand

As in Section 3 it is useful to first look at the level of Unscheduled Care demand occurring within each Health Region. Demand for Unscheduled Care arises at both emergency departments and local injury units. Because patients in these areas have different characteristics and clinical needs, we divide our analysis of this into two graphics; Figure 4.1 provides the presentation rate per 100 inhabitants for individuals over the age of 20 by Health Regions, while Figure 4.2 provides total presentations to each LIU in Ireland at an LIU level. This enables us to simultaneously to compare on a relative basis demand for Unscheduled Care across each region and understand how LIUs in a given region could be compensating for demand arising in certain regions (as the distribution of LIUs by region is uneven).

From Figure 4.2, we observe divergence in utilisations of Emergency Departments exists across regions. Presentation rates to Health Region SW and Midwest are markedly lower than those in Health Region WNW and DNE, with roughly presentations 20 per 100 population in SW and Midwest compared to 35 in Health Region DNE. The divergence in presentation rates across regions observed is a relevant concern for capacity, workforce, and future investment considerations. Additionally, further research could examine in more detail the drivers of this divergence by region beyond the age-related component to utilisation rates identified in Figure 3.9.

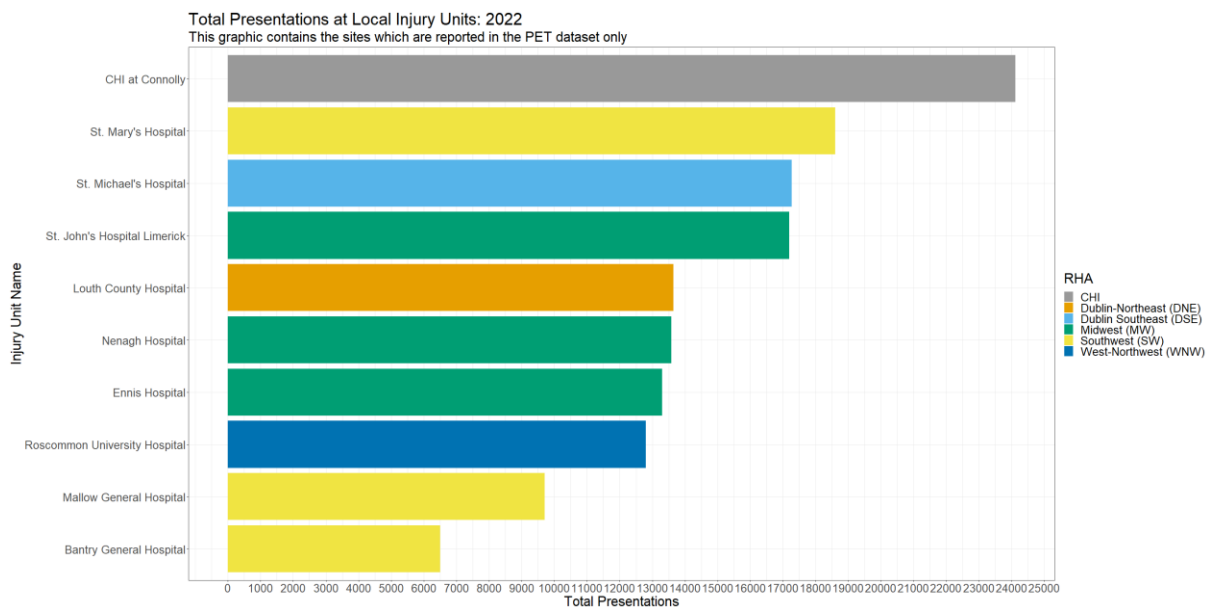
Figure 4.2: Presentation Rates at Emergency Departments by Health Region:2016-2022



Source: Patient Experience Time dataset, 2023

Local Injury Units (LIUs) are described as alternatives to emergency department care for “minor injuries that are unlikely to need admission to hospital” such as wounds, bites, minor burns, and some broken bones among other injuries (Health Service Executive, 2023). In total, there are 15 Local Injury Units in Ireland spread across the State³⁴. As Local Injury Unit availability is a substitute to treatment in Emergency Departments, it is important to examine presentations arising at each LIU to better understand how care delivered in LIUs compensates for regional demand. Figure 4.3 provides total presentations to each LIU³⁵, with a further categorisation of each LIU by its Health Region. Most notably, Local Injury Unit availability is uneven by regions, with for example Health Region Midwest having four local injury units, compared to Health Region WNW with just one. The prevalence of these centres may effectively offset demand for Emergency Departments and provide both timelier care for critical patients in Emergency Departments through reduced demand for ED resources and a better patient experience for patients with lower acuity ailments.

Figure 4.3: Total Presentations at Local Injury Units/Non-24-Hour Emergency Departments :2022³⁶



Source: Patient Experience Time dataset, 2023

³⁴ <https://www2.hse.ie/services/injury-units/>

³⁵ Noting that some LIUs fail to report data into the Patient Experience Time dataset.

³⁶ This graphic includes sites present in Patient Experience Time data held by the Department of Health only and includes non-24-hour Emergency Departments also. St Michaels is classified as a 12- hour emergency department.

4.3 Emergency Department Presentations by Triage Level

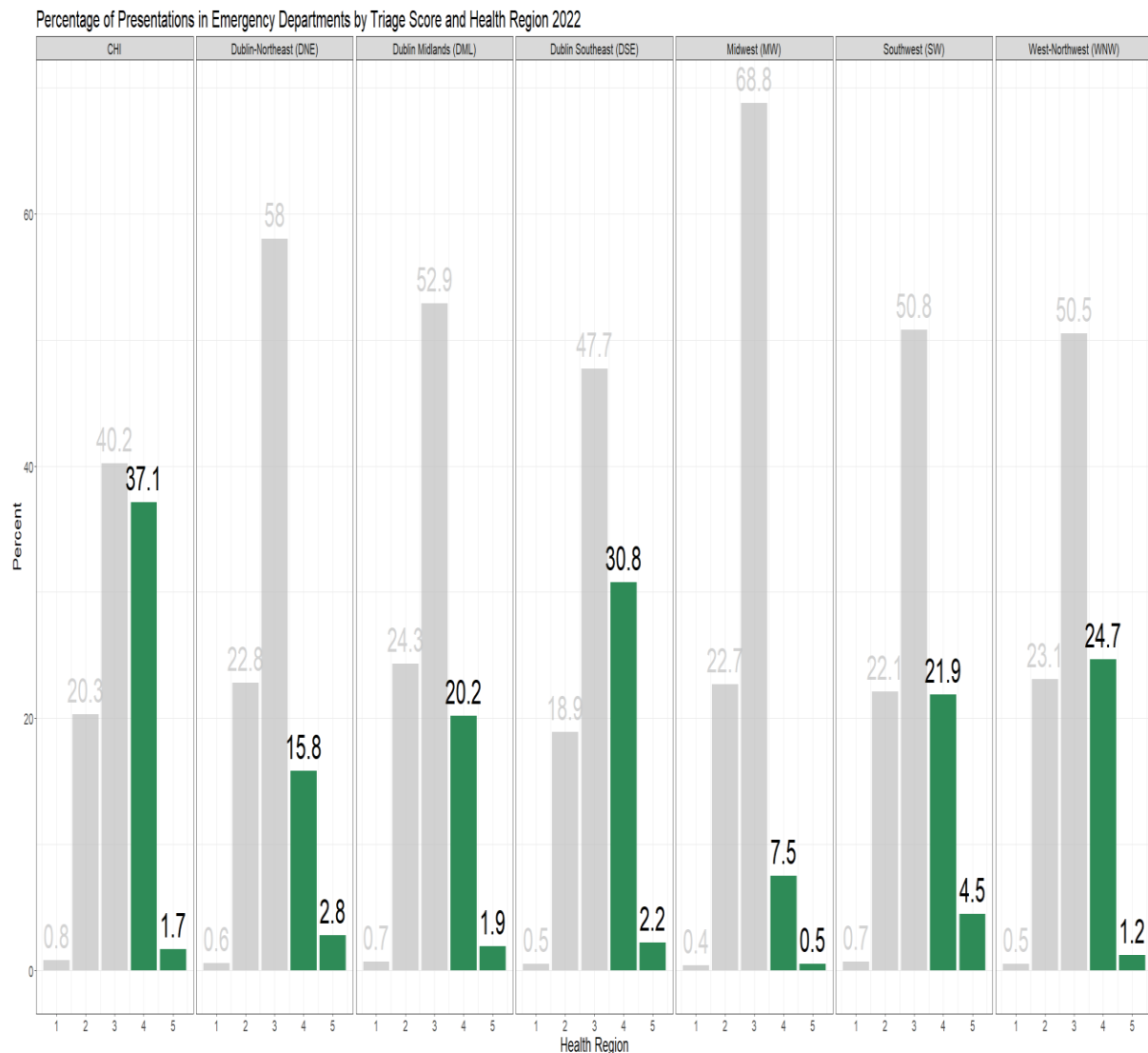
As discussed in Section 3.3 the Manchester Triage Score provides an understanding of the clinical need of patients presenting to Unscheduled Care. This section reflects on the differences in the share of Unscheduled Care presentations by Triage Score across the regions. This is important to consider for two reasons:

- I. A relatively high level of high-acuity presentations (category 1, category 2) would be directly associated with a need for greater inpatient and emergency department capacity, as well as associated workforce requirements.
- II. The prevalence of a high level of low-acuity presentations in regions determines the extent to which care can be viably substituted from Unscheduled Care settings towards primary or community settings, such as primary care centres.

In Figure 4.4, the percentage of presentations by triage score in each of the Health Regions is presented. We observe the following:

- I. Clear differences in the distributions of presentations across the Health Regions are present, with for example, Health Region Midwest having 8% of presentations with a triage score of “Standard/Non-Urgent”, compared to 33% in Health Region DSE.
- II. Children’s Health Ireland experiences a high level of low acuity presentations, with 38.8% of all presentations having triage scores of “Standard/Non-Urgent”.

Figure. 4.4: Percentage of Presentations by Triage Score in Emergency Departments in 2022³⁷



Source: Patient Experience Time dataset, 2023

4.4 Median Wait Times in Emergency Departments

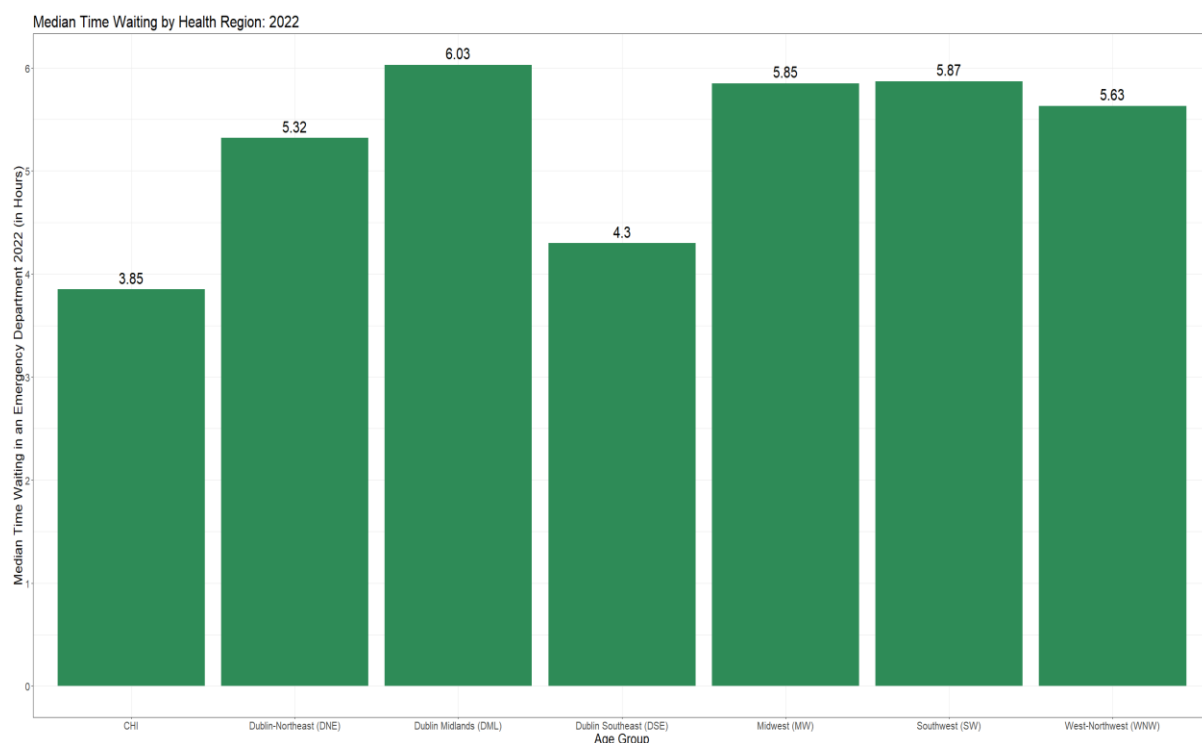
The median wait time provides an indication of how long patients wait within Unscheduled Care settings. In this section, an evaluation of the differences in median wait times across regions is explored. To enable policymakers to understand the challenges which exist at a regional level it is imperative to understand the operational challenges which pertain to each region. The HSE uses patient wait time targets to measure performance in their Management Data Reports making them an appropriate measure of effective delivery of Unscheduled Care. Wait times in Unscheduled Care is

³⁷ Reporting of triage scores varies across regions.

also an internationally recognised measurement of performance, with the National Health Service (NHS) setting a target of 95% of patients being seen within 4 hours³⁸. By comparison, the HSE has set a target for 70% of patients being seen within 6 hours, and 85% of patients being seen within 9 hours (HSE NSP,2022).

In Figure 4.5 median wait times across emergency departments within each Health Region are presented. A clear variation in median wait times is apparent, with Health Region DML having median wait times of 6 hours compared to 4.3 hours in Health Region DNE. A persistence underperformance of hospitals on emergency department wait times was observed in Clancy et al. (2022), finding that 88% of hospitals were non-compliant with 6 hour wait times in 2021. This can equally be observed when looking at wait times as in figure 4.5, with several Health Regions having median wait times above 6 hours. The HSE proactively responds to high patient wait times as part of their short-term winter planning response measures to increased ED demand. Unfortunately, as no full list of interventions and their associated expenditures at a hospital-level is available, we are unable to provide a systematic evaluation of the impacts of these interventions in this paper.

Figure.4.5: Median Time Waiting in an Emergency Department by Health Region 2022



Source: Patient Experience Time dataset, 2023

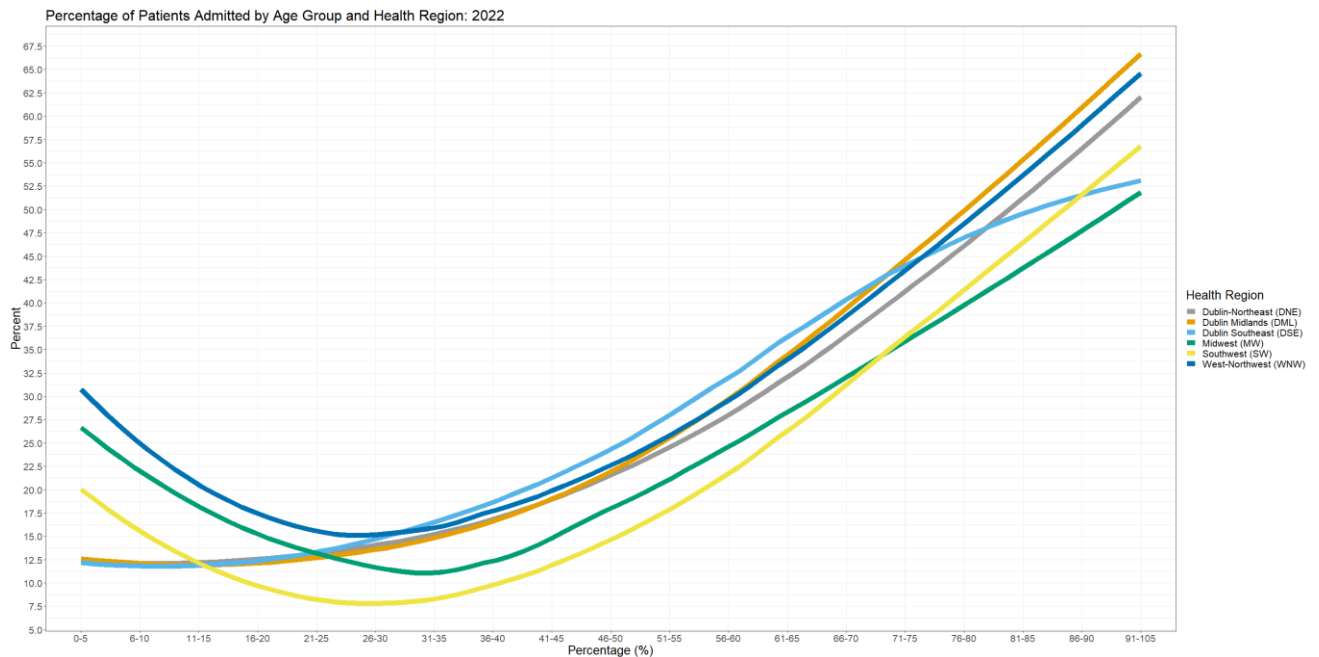
³⁸ <https://www.nuffieldtrust.org.uk/resource/a-e-waiting-times>

4.5 Regional Admissions Behaviour in Unscheduled Care

This section provides analysis of divergence in admission behaviour across each Health Region. We examine the divergence in admission behaviour for patients of different age and referral type. This is important as the level of admission in hospitals impacts its operational capacity, as well as having direct implications for overall patient outcomes in and out of hospitals. Patient rate of admission provides an indication of the relative acuity of patients attending Unscheduled Care settings in each region. Equally, over-admission of patients in some regions over others would lead to over-treatment of these patient groups, limiting the capacity of hospitals to patients with higher clinical needs or those awaiting elective treatment. Figure.4.6 below presents the admission rate of patients admitted by Age Group and Health Region in 2022. Evaluating the interaction of admission rates and age on a regional basis can help to identify divergences in behaviour which may require investigation and help identify further causal factors which influence the admission of patients. Figure.4.6 provides the following insights:

- I. The rates of admittance for patients varies significantly across the regions, with Health Region Midwest admitting on average 10% less patients over the age 60 than Health Region DML.
- II. Paediatric patients under the age of 5 are admitted 33% of the time in Health Region WNW, versus 11% of the time in Health Region DNE.

Figure.4.6: Percentage of Patients Admitted by Age Group and Health Region: 2022³⁹



Source: Patient Experience Time dataset, 2023

As discussed previously in Section 3.5, whether a patient has a referral to an Unscheduled Care setting prior to arrival allows us to make inferences about their previous interaction with clinicians, and their clinical needs. Differences in rates of referral to Unscheduled Care from various avenues (GPs, Out of Hours GPs, Nursing Homes) can point to areas where:

- I. Access to primary care could be under-supplied, causing more patients to arrive as self-referrals.
- II. GP services appear to be having a negligible impact on Unscheduled Care demand.
- III. A divergence in mode of arrival across other characteristics can be determined by region.

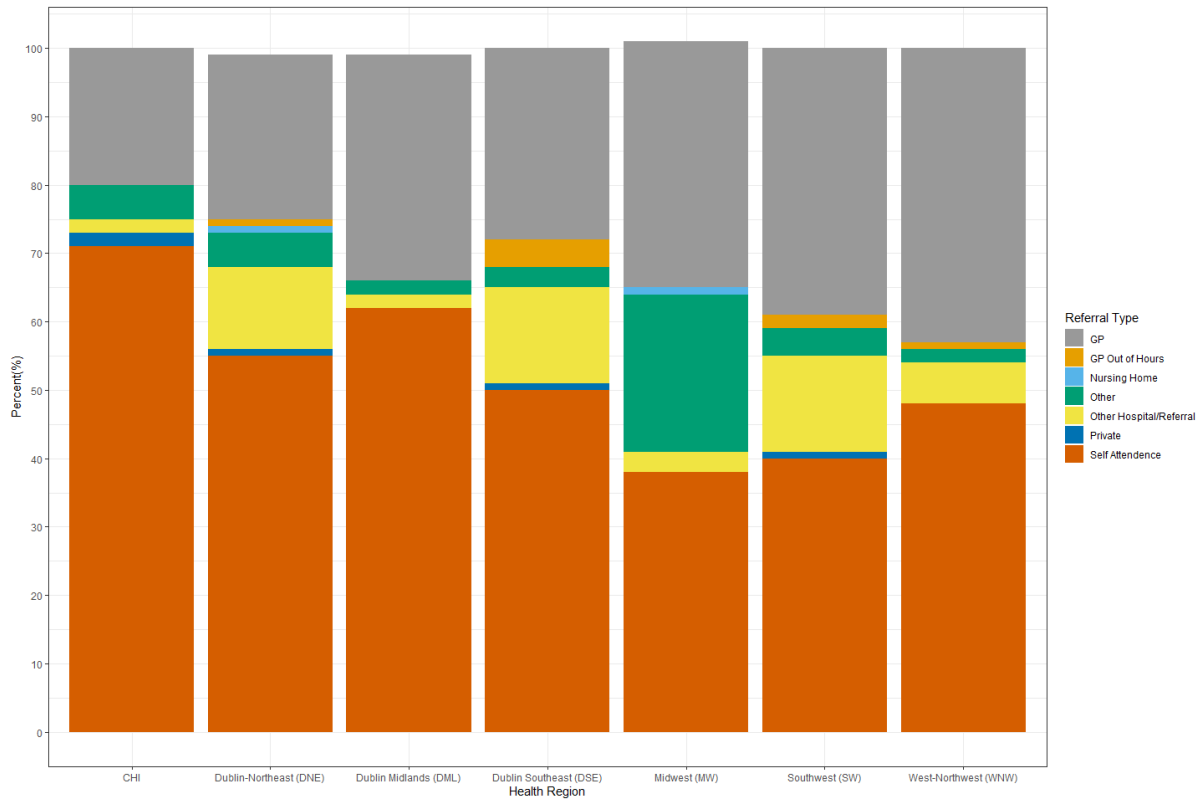
Examining presentations by referral type by Health Region provides the following:

- I. There is a large divergence in the proportion of patients arriving with a prior referral across Health Regions. In Health Region DNE, 24.7% of patients attend a GP prior to attending an Emergency Department whereas in Health Region WNW, 43.1% of patients attend a GP prior to attending.
- II. 70% of all presentations at Emergency Departments of CHI self-attend. This is of note given that as outlined in Figure 4.3 a high proportion of these presentations have a triage

³⁹ Patients admitted by Health Region, where assumed to reside in that region.

score of “Non-Urgent” or “Standard” which could potentially be treated in the community.

Figure. 4.7: % Presentations by Referral Type Health Regions: 2017-2022



Source: Patient Experience Time dataset, 2023

4.6 Key Findings

- I. Utilisation Rate of Unscheduled Care by Health Region:** Variation in the utilisation rate of emergency department settings by the adult population of each Health Region is observed. presentation rates to Health Region Southwest and Midwest are markedly lower than those in Health Region WNW and DNE, with roughly presentations being 20 per 100 population in Southwest and Midwest compared to 35 in WNW and DNE. The divergence in presentation rates across regions observed is a relevant concern for capacity, workforce, and future investment considerations, particularly as we move towards a population-based resource allocation model.
- II. Emergency Wait Times by Health Region:** There is substantial variation in median wait times by Health Region with patients in Health Region DML waiting on average 6 hours, versus 4.3 hours for patients in Health Region DSE. This presents a potential concern in the context of priorities to provide equal access to care.
- III. Triage Score Attendances by Health Region:** There is substantial variation in the triage level (acuity) of patients arriving in each Health Region, especially low acuity patients. For example, just 8% of presentations at Health Region Midwest are triage category 4 (Standard) or 5 (Non-Urgent). This compares to Health Region DSE, where 33% of presentations are of the same category.
- IV. Admission Rates by Health Region:** There is some variation in the admission rates across Health Regions, with for example Health Region Southwest admitting 22% of patients, compared to 29% in Health Region WNW.

4.7 Policy Recommendations

- I. **Regional Variation:** Further analysis is required to understand the determinants of the regional variations in patient presentation behaviour and the differences in admittance rates across the regions. The development of a deep understanding of these dynamics will help inform more iterative and accurate forecasting of regional demand, as well as policies to improve equitable care access across regions.
- II. **Data Reporting:** Hospitals within Health Regions who report limited or data on Unscheduled Care presentations should be encouraged to improve their reporting standards and systems. Data analysis should inform national and regional-level strategic planning, with appropriate provision of data key to enable this approach.

Quality Assurance process (relevant boxes to be ticked)

To ensure accuracy and methodological rigour, the author confirms they have engaged in the following quality assurance process;

Internal/Departmental

- Other internal divisions/sections
- Peer review (networks, seminars, conferences etc.)
- Line management

External

- Spending Review Subgroup / Technical Review Group
- Other Government Department
- Peer review (IGEES network, seminars, conferences etc.)
- External expert(s)

Other (Department of Health & HSE Policy Stakeholders)

Author (in line Department etc.) has circulated draft paper to relevant Vote in DPENDPR and consulted same **OR** author (in DPENDPR / Votes) has circulated draft paper to relevant line Department and consulted same.

Management Board sign off.

Bibliography

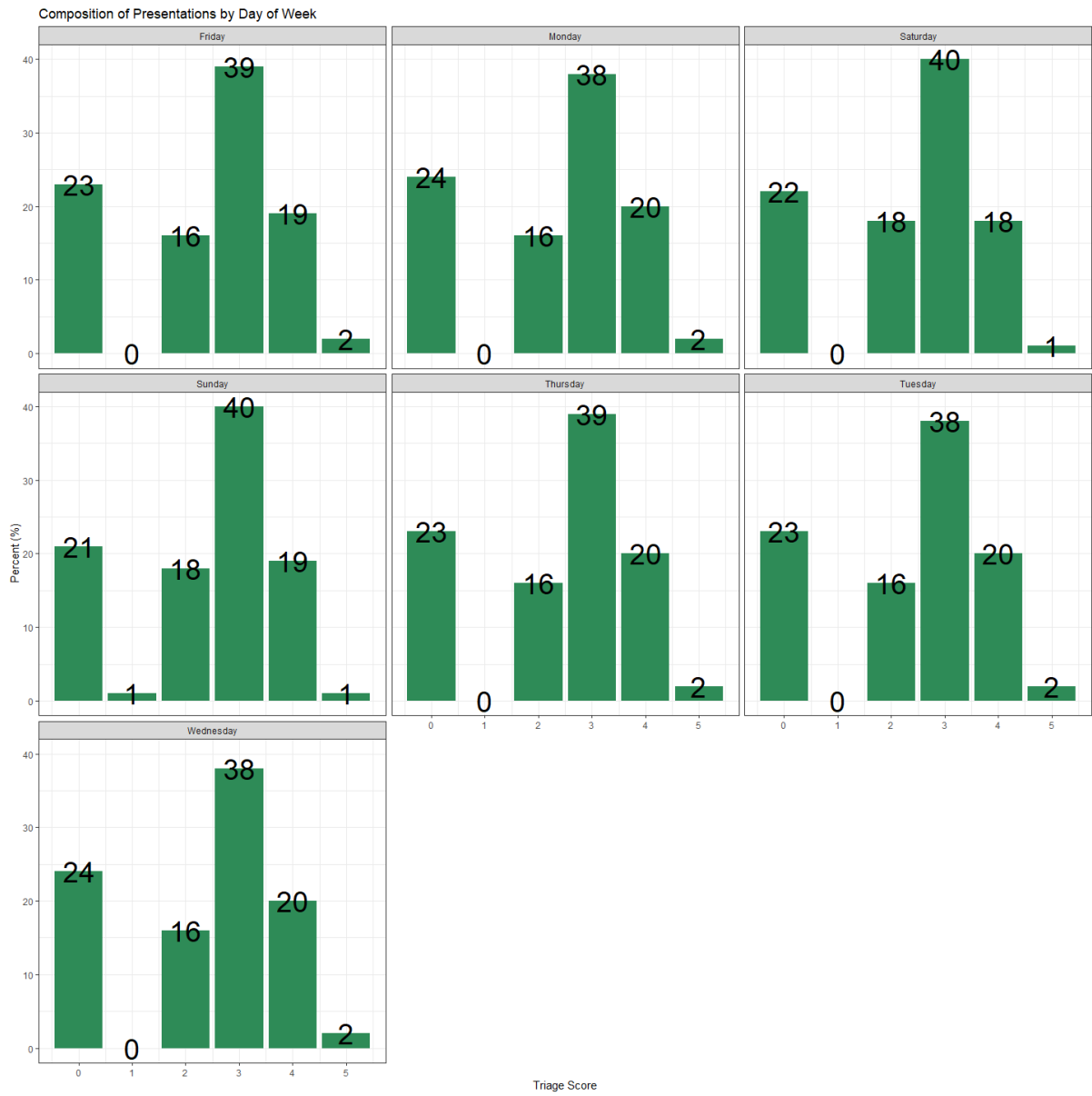
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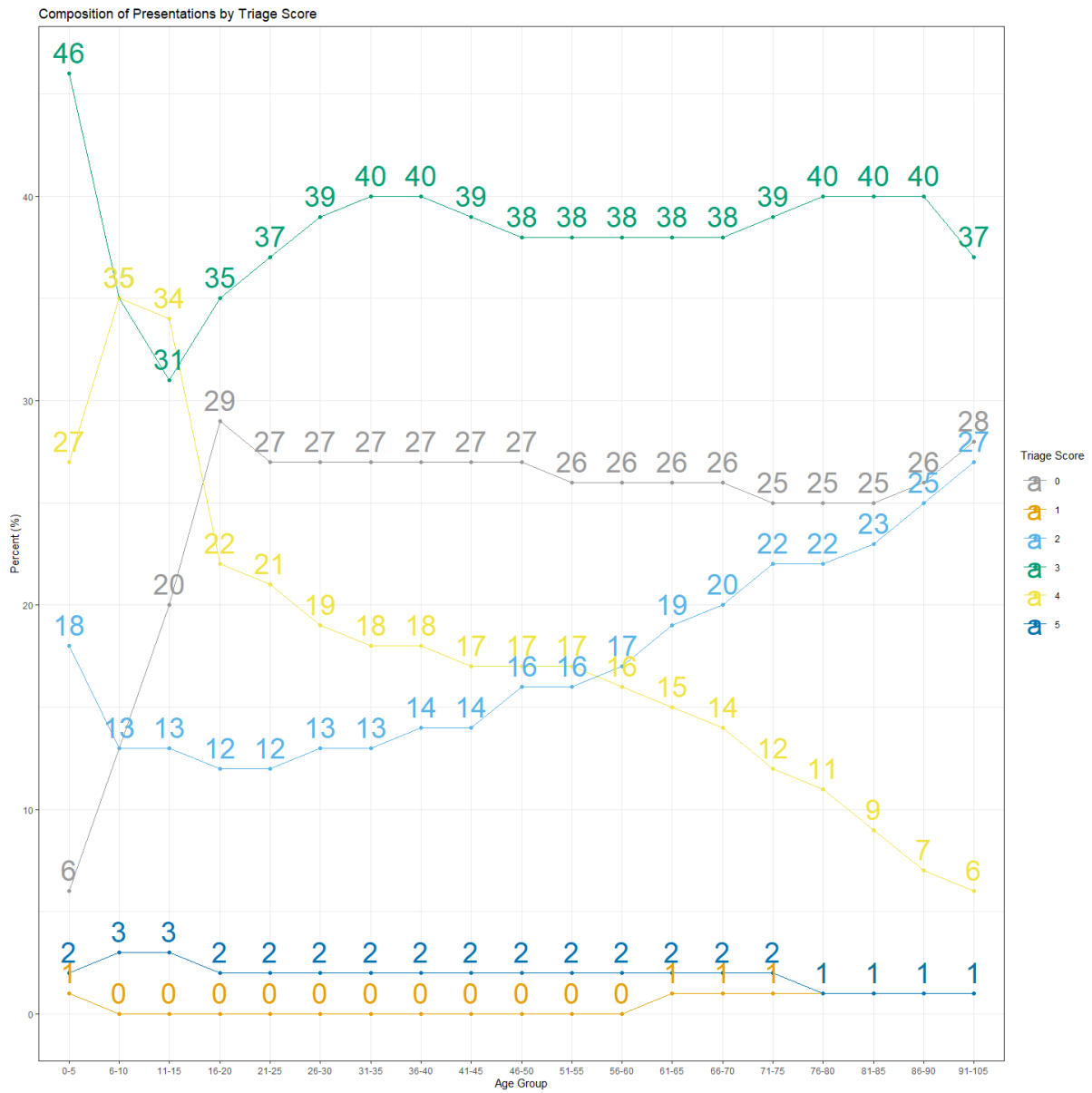
Appendix

Figure.A.1



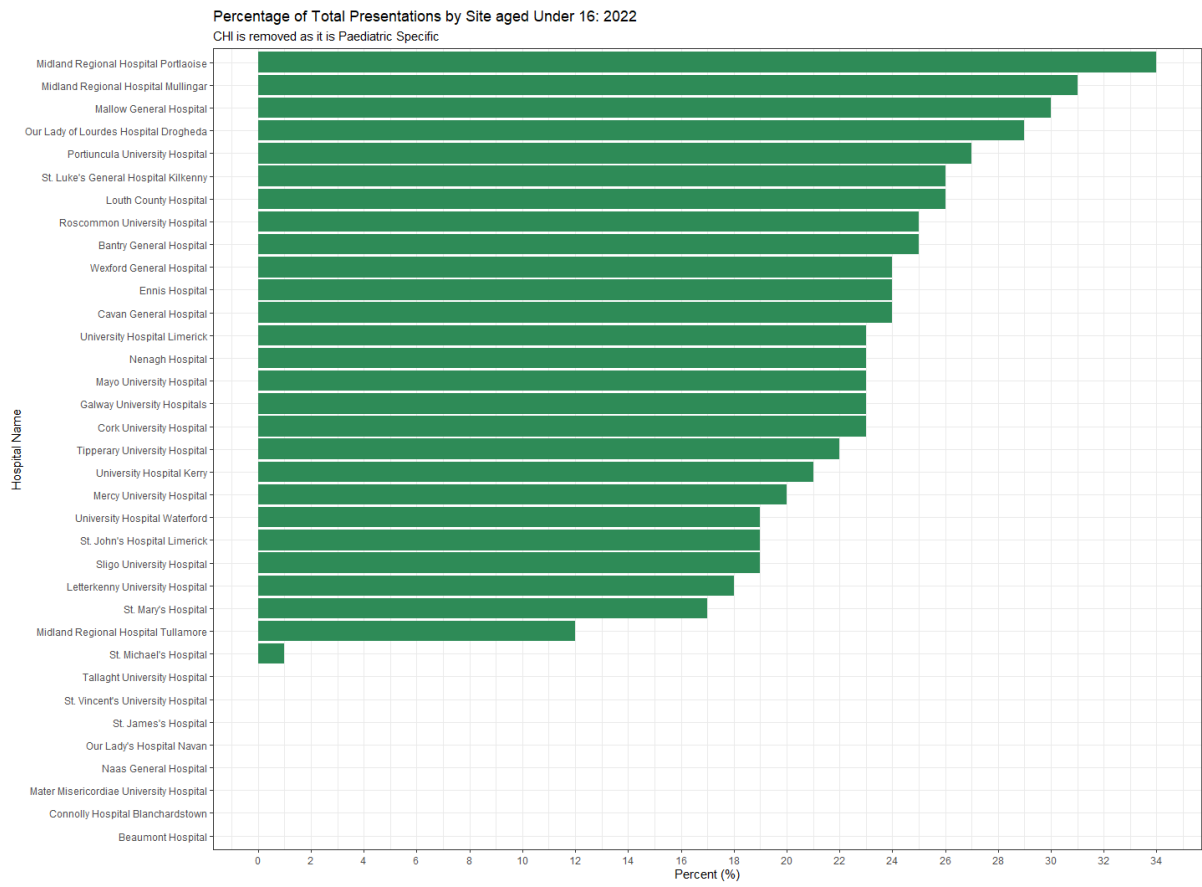
Source: Patient Experience Time dataset, 2022

Figure.A.2:



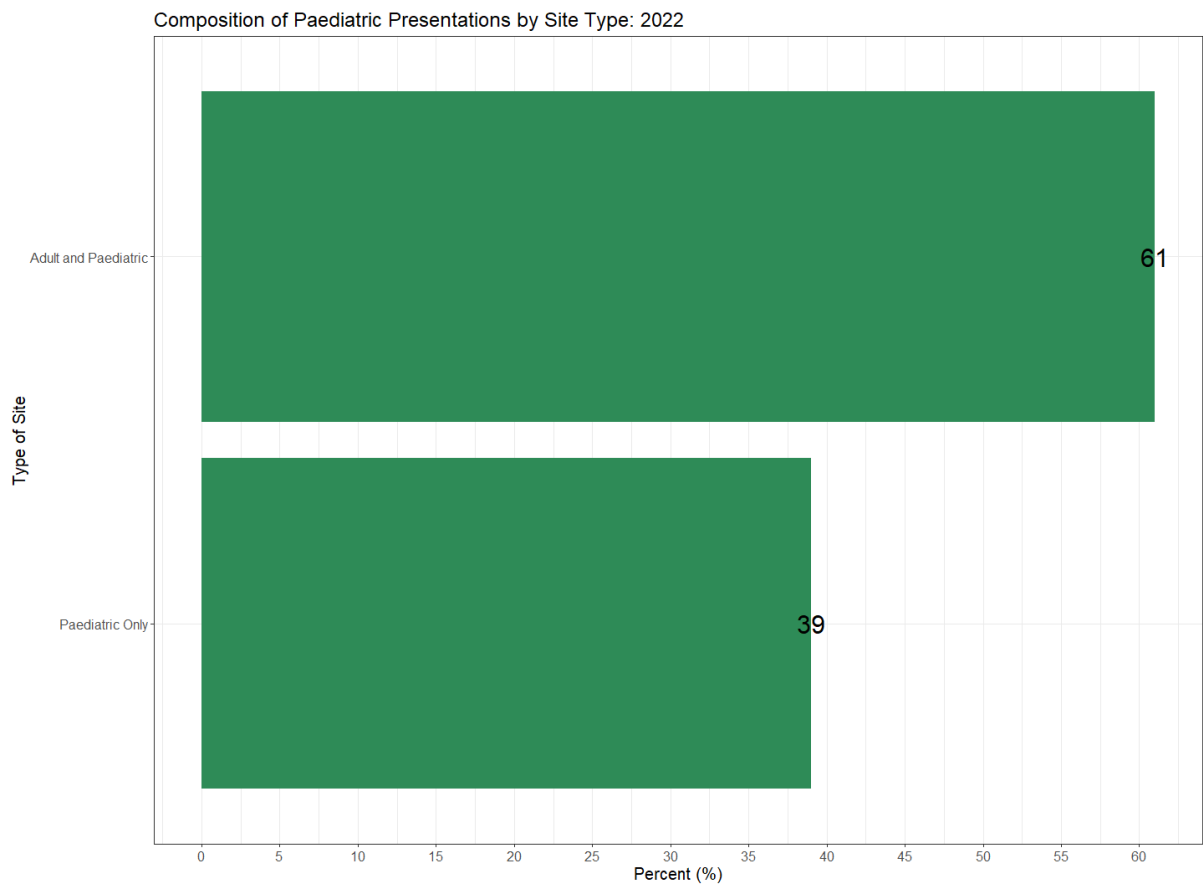
Source: Patient Experience Time dataset, 2022

Figure.A.3:



Source: Patient Experience Time dataset, 2022

Figure.A.4:



Source: Patient Experience Time dataset, 2022